

EDITORIAL

Railway Age

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The Railroad Labor Board's Award.

THE RAILROAD LABOR BOARD has made an award, granting to railway employees what is probably the largest advance in wages ever made at one time to any class of working men in the world. It is given to about 2,000,000 employees and will, it is estimated, amount to \$600,000,000 annually. The award, together with some statistics showing what it means to the various groups of employees, is published elsewhere in this issue. The average advance to the employees as a whole is about 22 per cent. It amounts to approximately 25 per cent for the clerks, 25 per cent for the maintenance of way employees, 19½ per cent for the shop employees, 23½ per cent for the agents and telegraph operators and 23 per cent for engineers, firemen, conductors and trainmen.

The principal argument advanced for an advance in the wages of railway employees was that it was needed to offset the increase in the cost of living. Other factors which the Railroad Labor Board was required to consider were the wages paid for similar work in other industries, the hazards of the employment, etc. The Board, in its report, sets forth that the increase in the cost of living since 1914 is now generally conceded by authorities to be approximately 100 per cent. The average earnings per railway employee in 1914 was approximately \$810. It is impossible to say what will be the average annual earnings of all employees now under the new rates of pay. Roughly speaking, however, there are 2,000,000 employees, and the advance in wages which has just been granted will make the total pay roll approximately \$3,500,000,000. It would appear, therefore, that the average annual earnings per employee on the new basis would be around \$1,750, or about 115 per cent more than in 1914. On the average, therefore, the advance in wages which have now been granted substantially exceed the increase in the cost of living.

But an average is an average. The advances of some classes of employees have been relatively much larger than those of other classes. The Railroad Wage Commission, created by the director general of railroads in the spring of 1918, adopted the principle of making larger percentages of increase in the wages of the lower paid employees than in those of the higher paid. The same principle was applied to a considerable extent in the making of the other advances in wages granted under government control. The result was the destruction of the relationships between the wages of different classes of employees which had previously existed. The Railroad Wage Board, in its award, also in many cases has acted on the principle of making larger advances to the lower paid employees than to the higher paid employees.

The establishment of the absolute eight-hour day generally and its non-establishment in train road service, where it is inapplicable, also have operated to further change the relations between the wages of different classes of employees. In consequence, while some employees as a result of the various advances which have been made, including those made by the award of the Labor Board, will enjoy total advances in wages far exceeding the increase in the cost of living, others will not even by this award be given advances which will fully offset the increase in the cost of living. The advances in the wages of maintenance of way and of most shop em-

ployees, for example, far exceed the increase in the cost of living, while the increases in the earnings of most classes of train and yard employees will hardly equal it.

Probably no changes in railway wages ever made ever caused so much dissension and trouble as the changes by which the wages of car repair men were made greater than those of switchmen. To them the recent strikes in yards all over the country are largely attributable. The Railroad Labor Board in its award grants the so-called "car knockers" an increase of 13 cents an hour, or only about 19 per cent, while it gives the switchmen an increase of 18 cents an hour, or about 30 per cent. Even this adjustment, however, will not be regarded with satisfaction by anybody except the car repair men. The car repair men are hardly more than common laborers and formerly received much less than switchmen. On the new basis they and the switchmen both receive 81 cents an hour. If the advance granted to the switchmen is fair, then the advance granted to the car repair men, although smaller, results in the latter still being paid excessive wages. Their average wage in 1915 was 26½ cents an hour. The new basis of 81 cents makes the increase in their wages since 1915 over 200 per cent. The advances granted them under government control were outrageously large and the Railroad Labor Board by granting them another large increase has merely added another outrage, and continued a condition which already has been prolific of trouble.

The award should cause great satisfaction to many employees because to them its result will be to make the advances in their wages since 1914 and 1915 exceed the increase in the cost of living by from 35 to 100 per cent. It will cause dissatisfaction to others, and especially to the employees in train service and the higher paid men, because it will make their total advances since five or six years ago relatively much less than those of other classes of employees and no more than equal, if actually equal, to the cost of living. Employees who are disappointed will be wise, however, if they will recognize the fact that under existing laws regarding regulation of rates and wages it can hardly do them any good to strike or talk about striking. The Transportation Act provides that "just and reasonable" wages shall be fixed by the Railroad Labor Board. The railroad companies could hardly defend in rate cases before the Interstate Commerce Commission, wages higher than those held "just and reasonable" by the Railroad Labor Board. Therefore, resort to the Railroad Labor Board is the only logical recourse for employees who are dissatisfied.

As to the public, it probably will think and be justified in thinking that on the whole the advances in wages which have been made during the last six years impose upon it as heavy a burden as it ought to be asked to bear. The total number of railway employees in 1914, the year on which the increases in the cost of living usually are computed, was 1,710,296, and the total wages paid to them was \$1,381,117,292. As already stated, the number of employees at present is about 2,000,000, and as a result of the recent award their annual wages will run at the rate of approximately \$3,500,000,000. The increase in the railroad pay

roll since 1914 has been about \$2,100,000,000 or approximately 160 per cent. The average increase in wages has exceeded the average increase in the cost of living. Undoubtedly a large majority of the people of the country have not had during this time as large increases in their income as in their cost of living. The public is likely to conclude that the total advances in the wages of railroad employees have been sufficient, and that any bad conditions that have been created by mistakes which have been made in fixing the relations between the wages of different classes of employees should be corrected merely by changing these relations.

On one very important railroad operating 2,000 locomotives, it is known that these locomotives are out of service 14 hours

The Idle Hour out of every 24; that they will average 10 hours in active service per day. This is a good average, but the railroad is not satisfied. It needs more

locomotives and the management knows that if just one idle hour of the day for each locomotive could be transformed into an hour of active service it would be equivalent to making about 200 additional locomotives immediately available. Knowledge of these facts, however, will not banish the idle hour. Improved terminal facilities, better terminal organization and an accurate periodical statement of the average time locomotives are held at each and every terminal for each and every cause are the main factors upon which any substantial improvement must be based. The periodical statement giving an accurate analysis of the time spent at each terminal by each class of locomotives on this railroad is a remarkable document. That it can be compiled every month at a nominal cost is a noteworthy achievement and will afford a highly valuable example to those executives who are objecting to the compilation of this data in place of utilizing it to discover how many idle locomotive-hours are being lost at each terminal on their railroad. The *Railway Age* hopes to publish in an early issue a description of the means by which this report can be made a practical operating factor on any railroad.

The majority of large locomotives built a decade ago were unsatisfactory because the capacity of the boiler was not great enough to meet the demands of

False Economy in Half-way Measures the cylinders. Recent improvements have brought about a great increase in boiler output without corresponding increases in size or weight, and therefore

many of these locomotives are being redesigned. In many cases where the old boiler was inadequate to supply the cylinders, these same cylinders are not large enough to utilize efficiently all the steam that can be generated by the boiler when fitted with capacity increasing devices. An engine with a redesigned boiler and with the same cylinders will of course be a free steamer and will show a high economy in fuel; nevertheless, if the fuel saving is the only gain, the increased boiler capacity is not being used to the best advantage. When the boiler is redesigned the entire engine should be checked over and larger cylinders should be applied if this change is necessary to utilize fully the boiler capacity and adhesive weight. This is the truly economical practice, for higher boiler capacity brings a larger return when applied in increasing the train load than when used as a means of reducing fuel consumption. Because money is hard to get there is a tendency to spread an appropriation over as many engines as possible. This is no doubt the reason why cylinders often are not changed when the boiler capacity is increased. The larger train load made possible by enlarging the cylinders and the

lengthened service life of the locomotives should not be overlooked. Probably a change would be desirable even if the greater direct saving would be effected by using the smaller cylinders, for the more the capacity is increased by the redesign, the longer will be the service life of the engine and the lower the annual depreciation cost.

One of the problems confronting the operating officer in securing the maximum mileage from cars is that of preventing their delay at intermediate stations or

Picking Up Cars at Outlying Points blind sidings. This is particularly likely to occur at points where there is no agent, but it is also common at the smaller open stations. While delay to

an individual car may not be serious in itself, when this is multiplied many times on a system it becomes large in the aggregate and exerts an appreciable influence on the gross car movement. On many roads it is the practice for these cars to be picked up as rapidly as the despatcher may be able to arrange for passing trains to handle them and issue specific instructions therefor, but it is common experience that for one reason or another delays result from such a practice. To remedy this condition one road has recently inaugurated a practice of starting trains out light from terminals whose principal duty is to pick up all such cars and start them moving. This expedient has been found to contribute materially to the elimination of delays and to a corresponding increase in the mileage per car per day. Because of this fact it is particularly worthy of consideration at the present time.

The latest available information indicates that there are at least 175,000 bad order freight cars held out of service on

Catch Up the Heavy Car Repairs the railroads of the United States, or approximately 7.5 per cent of the total available equipment. This is over 80,000 more bad order cars than the minimum of 4 per cent which is usually

considered attainable under the best conditions. Furthermore, whereas of the average daily output of repaired cars only about 10 per cent have been given heavy repairs, it is probable that not less than 90,000, or over half of the 175,000 cars now in bad order, are seriously in need of heavy repairs. This is the result of conditions which have seemed to justify the sacrifice of sound permanent policy in the matter of maintenance to meet the exigencies of the extraordinary traffic in war materials. The present situation is acute, particularly as to the requirements for open top and box cars, the demands for which have become so insistent as to assume emergency proportions. So far as repairs are concerned, however, it differs from the war emergency in one important respect. For the duration of the war its successful prosecution became the all-absorbing purpose of the nation and where the immediate needs of this purpose could be furthered by the sacrifice of sound permanent policies, it was necessary that the future be left to take care of itself. Now, however, the country needs the permanent re-establishment of normal industrial and commercial relationships, and this requires a steady increase in the number of serviceable cars. Sufficient new equipment fully to relieve the shortage will probably not be in service for several years. The maintenance of existing equipment is at a low level and there is no reserve to permit a further postponement of needed repairs. Hence, while every effort must be put forth to reduce quickly the present excessive number of bad order cars, the average condition of the equipment must at the same time be permanently improved. This can only be done if cars needing heavy repairs are given heavy repairs. To meet the emergency these repairs must be made wherever

the cars are found, without waiting for the opportunity to return them to the home lines. The car departments owe the roads 80,000 cars, not only fit to run, but fit for the kind of service they are designed to furnish.

Railroads in all parts of the country have secured remarkable results in increasing the traffic originating upon their

**"With" Instead
of "For"
the Farmer**

lines by helping to encourage agriculture and industry. The July 12 issue of "American Railroads," published by the authority of the Association of Railway Executives, tells of a number of ways in which different roads are co-operating not only in helping to increase production in the farming districts, but also in marketing the products and in getting these products promptly to the market—a most difficult task under present conditions. The New York Central Lines have formulated a policy which indicates a high degree of co-operation with the farmers. It may possibly best be expressed by quoting as follows from F. S. Welsh, manager of agriculture and stock yards for that system: "The adoption of a policy of 'service' and a willingness to do things 'with,' instead of 'for,' the farmer, has brought to us a better understanding and a closer relationship with the problems of agricultural communities along our lines, and to these communities a realization that the railroad in the field of agriculture is not impersonal, but is a real constructive force seeking to play its proper part as a public service institution in the advancement of community progress." It is just this sort of effort that will go a long way to heal past misunderstandings and secure a degree of interest and co-operation on the part of the farming communities that will greatly help to put the railroads on the right sort of a basis with the public.

A good many kinds of railroad work could be made to move more smoothly if celerity were made a primary object. Every

**Why Not
Speed Up in Your
Department?**

car record officer who is not already doing first-class work in this respect, may be expected to emulate the Delaware & Hudson, but why should not train despachters, local freight agents and many others also take a lesson here? A certain local freight office in a large city answers telephone inquiries from expectant consignees (concerning incoming freight, l. c. 1 as well as car loads) as quickly as does the car clerk above spoken of. How many of your freight agents do as well? The ticket clerk who keeps a passenger waiting ten minutes while he fills out an unusual form ought to be called upon to explain why he does not do it in three minutes. The train despachter is in a class different from that of the local agent because he does not come into contact with the public except when trains are late (and then only indirectly), and when the company is, *prima facie*, at fault. But if he—the collective train despachter—can shorten the average time taken to publish to passengers the facts about bad train delays, he will be voted a medal. Why not announce prizes to be given to the despachters who shall do the quickest work in correcting train troubles? It would be necessary, of course, to go into very small details, for big cases do not happen often enough to keep up a lively interest. Suppose a train is delayed 20 minutes; why should not the despachter, or somebody, give careful thought to see whether some passenger cannot be saved a part (or all) of that amount of time, and thus be made into a warm friend of the company? Twenty minutes is a short time, and one passenger is only one friend; but much of our most boasted efficiency has been built up on just such small beginnings.

Floodlighting has received much popular attention during the past three years, but there have been comparatively few

Floodlights

and

Their Uses

applications in the railroad field which have been based on anything like scientific principles. The tungsten lamp with its high intrinsic brilliancy made floodlighting units possible and it was tried out in many different fields. War conditions demanded that a great number of emergency lighting systems be installed and these demands were met quickly and at a minimum cost with floodlamps. The result was that the use of floodlighting became generally popular. This led to many ill-advised applications, since floodlamps do not give uniform illumination and if not properly placed cause an objectionable glare and cast shadows where they are not wanted. There are cases, however, where they may be used to very good advantage. They are used for hump and classification yards, for clearing wrecks, lighting long platforms, for excavation and construction work, for lighting turntables, and a form of floodlighting has been in use for a long time in roundhouses. In yards they are particularly desirable for the reason that they eliminate the poles which must be used for other forms of lighting. Almost all of the objections to floodlighting have been caused by improper installations or injudicious applications. They must be so placed that any possible glare from them can not be used as an excuse for accidents or carelessness. When properly used they constitute an inexpensive light which is portable, or quickly installed permanently.

In case of doubt or uncertainty the safe course must be taken (Rule No. 107); and settle *your doubts quickly*. These

**For How Many
Seconds Will You
Risk Your Train?**

italicized words are not printed in the Standard Code, but every conductor and every engineman would do well to engrave them on the tablets of his memory. F. J. Mitchell, a freight conductor on the Canadian Pacific, while descending a steep grade on a recent trip, noticed a car in his train which *he thought* leaned too much to the north side; and he stopped the train at once. He found an arch bar broken and, no doubt, averted a costly derailment; and he receives commendatory notice in the monthly "Educational Bulletin" of General Superintendent J. J. Scully. Conductor Mitchell acted, evidently, to settle his doubt as soon as he recognized it; as soon as he doubted that the car was moving safely. We cannot all be heroes, but it is the duty of everyone to be always wide-awake. Perhaps the most effective rule for fitting oneself to meet such emergencies as this is to study the whole science and art of railroading *all the time*. Study keeps the mind lubricated. No one can tell what kind of emergency is going to confront him. Independence in thought and mental alertness at all times are essentials of the best efficiency and loyalty, not to mention heroism. Everybody interested in safe train-running remembers a tragic collision in February, 1917, when each of three men in a locomotive cab ought to have had a doubt (about the color of a signal light), and if they had had it—if one of them had—and had settled it according to the rule, would have averted or mitigated disaster. This Canadian Pacific bulletin also educates by bad examples as well as by good ones. In one month 21 agents and nine operators received black marks for pretending (by entries on daily sheets) to have recorded the variation of their clocks when no time had been sent; and 16 of the cases were second offenses. A conductor received 15 demerits for not reporting a negligent train-baggageman. Adjusting car couplers by pushing with the foot was visited, not simply by a friendly word from a safety committee, but by five demerits; and the yard foreman, who neglected to warn the careless man, also got five.

"Taking it all in all, if Mr. Ford, himself, wants to learn something about railroads, or if he wants his son to learn the business, he could not possibly have

Detroit, Toledo & Ironton done better than to buy the Detroit, Toledo & Ironton Railroad." This remark, quoted from the conclusion of

the able article by F. J. Lisman on another page of this issue, succinctly sums up an idea that is probably being held at the present moment by the majority of the railroad men of the country. The *Railway Age* is fortunate in being able to present to its readers an article on Mr. Ford's purchase of the Detroit, Toledo & Ironton by an observer who is in a position to speak so authoritatively as Mr. Lisman. He points out that the D. T. & I. was built by promoters rather than by railroad men and that as a result it has been confronted with obstacles to efficient operation that the railroad men who have operated it have found impossible to overcome. Mr. Ford has paid \$5,000,000 for the property, subject to \$1,800,000 first mortgage bonds and car trust certificates. It is estimated that the present physical value of the railroad is from \$16,000,000 to \$20,000,000, which on the face of it looks as though Mr. Ford has secured a bargain. But, as Mr. Lisman points out, the road has a line built in many places to make distance rather than to save it; it needs heavier rail, better ballasting, etc., and what is perhaps most important, it has a crooked "hilly" line through Adrian, Mich., and at its southern end a 10-mile stretch of uncompensated 1.7 per cent grade with 12-degree curves. Mr. Lisman estimates that to overcome these obstacles it may be necessary to relocate some of the line, possibly abandon parts of it, and that as a whole it may be necessary to spend \$8,000,000 additional to the purchase price, not including expenditures that may be necessary for shops, equipment, sidings, etc. He is optimistic enough to believe that if the thing is worked out right the railroad will probably pay a reasonable rate of interest on its entire cost.

The car record office of the Delaware & Hudson at Albany, N. Y., answers tracers in half a minute—an operation so

Quick Freight Car Tracing quick that shippers who make their inquiries by telephone sometimes accuse the tracing clerk of "faking." The explanation of this seeming magic is the smallness of the road, and a couple

of loud speaking telephones, which Superintendent J. E. Roberts has installed at a slight expense. The road being small—though its lines aggregate a length of over 900 miles and it moves freight cars 175 million miles yearly—all car records, from all junctions, can be brought together in Albany on the next morning after the completion of the 24-hour day for which they are made; so the information given to inquirers is never more than one day old. The company has a general office building (just completed a few years ago) which is perfectly adapted to its purpose. The car record clerks, about 25 of them, work in an airy room with daylight on three sides; and the man, sitting at one side of the room, who receives an inquiry by telephone for, say, B. & A. car 123,456, at once repeats the number on the room telephone. Each one of the 25 women hears it. Only the one who has the "B" book takes pains to fix the number in her mind; but she is the one whose book contains the record of the movement of that car for the current month, and she turns at once to page 456. If she does not find the number inquired for she at once informs the tracing clerk that there is no record. If she does find it she tells him (for example) "delivered to the Erie at Binghamton on the 25th," and he repeats that answer to the original inquirer, who is still waiting at the other end of the telephone line—perhaps 100 miles away. A dozen consecutive inquiries have been

answered in this way in 25 seconds each. The girl usually shortens the time a few seconds more by giving her reply in the abbreviated phraseology used on her book.

The bridge engineer of one of the more prosperous western roads declared recently that he would use every means in

Bridge Renewals and Repairs his power to avoid the renewal of any bridge on the lines under his jurisdiction as long as the present price level remained in effect. Fortunately for

him, the property with which he is connected has been maintained in much better condition than the average railroad the country over. Consequently, it is much easier for him to carry out his expressed policy than it would be on some other line that has been compelled to follow a hand-to-mouth program with regard to bridge renewals for many years. This tendency is unquestionably general and is all the more serious because it is being pursued after a number of years during which the bridge renewals have been less than normal. For some time the prevailing rule that renewals should be made whenever the annual cost of maintaining the old structure exceeds the annual cost of the new one has not applied. Because of the shortage of material in the closing months of the war, great pressure was brought on the railroads to resort to all manner of makeshifts to avoid the building of new structures. Then followed the closing year of the government control period with its retrenchment in all expenditures. In the meantime the cost of replacements has continued to advance so that the tendency to resort to further repairs of old structures is more marked than ever before. This is obviously an unhealthy condition. Too large a proportion of the structures are being retained in service under a form of special dispensation with the result that a larger part of the bridge maintenance activities are in the nature of emergency measures, while the burden of responsibility on the maintenance officer is increased enormously. Another effect of this condition which must not be overlooked is the obstacle which it puts in the way of the use of heavier motive power on the railroads.

Much has been said about the need for new railway shop machinery and equipment to replace that which is worn out and obsolete. The need is urgent, but

Maintain Your Shop Tools can any steps be taken to increase shop output pending the installation of new machinery? One important way to

make the most of present repair shop facilities is to maintain them in the best possible operating condition by careful periodical inspection and prompt repairs to any machines showing signs of weakness. Another important point is the assignment to each machine or tool of work to which the machine is best adapted. This implies that shop executives keep in close touch with their cost systems and see to it that the most efficient methods of performing the work are adhered to. For example, if the records show that cast iron crosshead shoes can be machined twice as quickly on a miller as on any other type of machine, why use a planer that may be needed on other work? The total results of weeding out uneconomical practices in all the repair shops of the country would be as effective in improving the movement of traffic as the purchase of many cars and locomotives. Results are needed now. Even if unlimited capital was available, no considerable amount of new machinery could be ordered, shipped and installed in less than six months and unless more cars and locomotives are made available at once, many industries will be obliged to suspend production either through the lack of raw material or coal, or the inability to ship their products. Present repair shop facilities must be utilized to the utmost.

An Unprecedented Action to Promote Railroad Efficiency

THE CHIEF EXECUTIVES of the railways, at a meeting in New York on July 16, took action which is not only of the greatest significance and importance under present conditions, but is unprecedented in the history of American railroads. On the recommendation of their advisory committee, which recently was created, they set up certain standards of efficiency of operation, which, by resolutions unanimously adopted, they pledged themselves to make every effort to attain. The purpose and object of this effort will be to relieve the present dire transportation situation in the shortest possible time. The significant feature of every one of the standards set up is that it is higher than any corresponding standard hitherto attained in the actual operation of the railroads of the United States, and is probably higher than ever was attained in the operation of the railroads of any country.

The first standard is "an average daily minimum movement of freight cars of not less than 30 miles per day." The average movement per car per day under government operation in 1918 was 24.6 miles and in 1919 23.1 miles. The greatest average movement ever attained in any year was in 1916 when it was 26.9 miles. If the railways should accomplish what they have set out to do, it would mean practically five miles per car per day more than was made under unified government control in 1918 and would be equivalent to adding 400,000 to 500,000 cars to the available equipment.

The second standard set up is "an average loading of 30 tons per car." The highest average ever attained was in 1919 when it was 29.1 cars. An increase of one ton in the average load per loaded car would be equivalent to adding from 50,000 to 75,000 to the available supply of cars.

The third standard established is "the reduction of bad order cars to a maximum of four per cent of the total owned." The last report upon the subject showed 7.4 per cent or about 178,000 of all the freight cars of the United States in bad order. A reduction of this to four per cent would increase the useful available supply of cars by about 80,000.

The fourth and fifth standards set up are "an early and substantial reduction in the number of locomotives unfit for service" and "more effective efforts to bring about the return of cars to the owner roads." To enable the managements of the railroads, and also the Interstate Commerce Commission and the public, to know how successful each railway is in improving its operating results, it was resolved that "all railway companies shall forward to the advisory committee or such agency as the latter may designate, reports that will enable a check to be made currently of performance under this resolution, and the advisory committee shall arrange for comparative compilation of such reports and make distribution to the individual companies." In order to achieve the results they have resolved that they should and will secure, the railway managements will have to improve greatly the efficiency of operation of the individual properties and co-operate loyally with each other. They will have to have the support of their employees, and the recent wage award ought largely to remedy the labor conditions which for some months have so seriously interfered with efficient operation. The managements will also have to have the energetic support of the Interstate Commerce Commission and of shippers, for the Commission and the shippers can largely determine how heavily cars shall be loaded and also how rapid the circulation of cars shall be, since cars are in the hands of shippers about one-third of the time.

The action of the railroads in creating an Advisory Committee and local committees to bring about better co-

operation between themselves, and in setting up as attainable and to be attained operating standards higher than ever were before attained under either private or government management, is significant of a revival among railway executives of the spirit of enthusiasm and initiative which in the past caused the great increases in the efficiency and economy of operation of our railroads. The welfare not merely of the railroads, but of the nation, demands that they shall receive the encouragement and support of labor, of shippers and of the regulating authorities. Unless the railways are enabled to handle more freight many industries all over the country will be forced to close down. This will mean ruin for many business concerns and unemployment for many hundreds of thousands of working men. That disaster must be averted.

Abolish Reconsignments and Shippers Order Privileges

THE DEMANDS FOR transportation service continue to increase as the roads are entering the grain-moving season. These demands can be met only by securing greater service from the equipment now in use. This result can only be accomplished by reducing the delays to which cars are now subjected and thereby increasing the average miles made per car per day. In no field is the demand for transportation more insistent than in the coal trade, yet curiously enough it is here that practices are found in an aggravated form which are serving greatly to retard the movement of cars, namely, the extensive use of consignment and "shippers order" privileges. Created in the days of over-zealous competition, these concessions have come to be abused so generally that they are resulting in a large number of freight cars being converted from carriers of freight into rolling warehouses which are shunted from place to place at the will of the shipper to take advantage of fluctuating markets or supply. As an illustration of the magnitude of this practice, 65 per cent of all of the coal brought into Chicago by one of the largest coal-carrying roads is reconsigned, while only 35 per cent moves direct to the point of unloading, and the proportion reconsigned on all roads entering the city is only slightly less.

Although orders are received for the reconsignment of about 90 per cent of the cars before these cars arrive at the city classification yards, the fact that they are subject to reconsignment prevents their being classified at outlying terminals direct for delivery as is done with as much other traffic as possible. Rather, their movement is slowed down and their classification is made necessary in the already overburdened city yards. Also the other 10 per cent of the cars assigned are placed on "hold tracks" where they remain from two to five days awaiting instructions after which they must be moved one by one at added expense.

In an effort to expedite the movement of coal through Chicago, the terminal committee at that point has issued an embargo against all coal not billed to a definite destination and an order prohibiting the reconsignment of cars for which reconsignment orders are not received a sufficient time in advance of the arrival of the cars to permit the necessary switching instructions to be issued without delay to the cars. The Illinois Public Service Commission has indicated its approval of this action by telegraphing the Interstate Commerce Commission recommending that the National Commission suspend reconsignment and blind billing privileges at all points. The issuance of such an order will free the roads from the parasitic burden of performing transfer and warehouse service for which they were never created and will enable them to place their equipment wholly in transportation service. It is only in this way that the greatest service may be rendered to the largest possible proportion of the shipping public.

New York, New Haven & Hartford

OF THE MANY PROBLEMS which have burdened the New Haven—operating, financial and economic—the problem of personnel has been of importance second only to that of the relationship which exists between New England railroads and the position of New England industries in the economic life of the United States. It is not necessary to go back over the history of the Mellen régime when the responsible management was so far away from the details of operation that it would have been a miracle if employees and officers had not become somewhat demoralized. What is, however, of great interest and importance is the attitude of the present management toward this aspect of the New Haven's problems.

It is customary for a railroad president to close his annual report with more or less perfunctory thanks to employees and officers for their work during the year. In the 1919 annual report of the New York, New Haven & Hartford, however, E. J. Pearson, president of the road in 1917, federal manager during government control, and now again president of the corporation, speaks to his people in a far from perfunctory way. He says: "All employees are directly interested in the successful outcome of the many matters involved. They are especially interested in the improvement of the property and will respond fully to opportunities to improve its service. Their ability, experience and loyalty have been demonstrated through many difficult situations, for which they deserve high credit. As through their endeavors they establish themselves in the friendship and confidence of the many the New Haven serves, so will they also enhance in public opinion, the reputation and standing of the road. The benefits to the railroads provided by the Transportation Act are made dependent upon proper and economical operation. It must be the aim of all to bridge the present interim with their best efforts and to operate so that the requirements of New England and also those of the Transportation Act for service and economy will be fulfilled."

In its financial problems the New Haven has been greatly helped by the government. The Railroad Administration loaned it \$43,964,000 to pay off debts maturing in April, 1918, and the total indebtedness of the company to the government is now \$66,000,000; in addition the company is seeking a further loan of \$13,500,000. Assuming that this loan is successfully negotiated, the New Haven's financial crisis will have been tided over for some years. In the meantime, the operating problem and the freight rate problem, due to the intimate relation between railroad rates into and out of New England and the entire industrial situation within New England, will have to be worked out. On the purely operating problem a substantial beginning of a solution has been made. In 1919, under government operation the New Haven earned a total of \$106,545,000 which is at the rate of \$54,200 per mile of road. This was an increase of \$4,251,000 over the earnings in 1918, due entirely to an increase in earnings of \$5,394,000 from passengers. Operating expense in 1919 amounted to \$92,473,000—an increase over 1918 of \$4,727,000. The net income accruing to the government was \$10,223,000 comparing with a rental paid by the government of \$17,251,000.

One of the difficulties connected with the operation of the New Haven is the preponderance of passenger business. The passenger train mileage in 1919 was approximately 14,200,000, and the freight train mileage was approximately 6,000,000. The earnings from passengers and express, exclusive of mails and incidental earnings, amounted to \$50,000,000, comparing with \$49,000,000 earned from freight revenues. The total number of passengers carried one mile in 1919 was 2,024,000,000, or a passenger density of 1,030,000 passenger miles per mile of road. Even with the increased passenger fares the average

receipts per passenger per mile on the New Haven amounted to 2.212 cents, rates to soldiers, clergymen, etc., accounting for the difference between this figure and the 3 cent a mile rate. There are going to be very serious difficulties in the way of raising freight rates in New England as will be explained later, but it would seem that passenger rates might be increased without affecting the industrial relations of these states with the rest of the country and thus afford a necessary relief to the New Haven.

It is sometimes said, and probably correctly, that if New England had as high freight rates as the rest of the country New England industries would be forced out of business. New England manufacturers can compete successfully with manufacturers in other parts of the country only through a rate structure which favors New England. While, therefore, the Interstate Commerce Commission may find it possible to adjust the proportion of rates which the New England roads receive on a through haul so as to give the New England roads something more than they are now getting, the freight rate problem will have to be handled with great skill and knowledge if the goose that lays the golden egg is to be continued in healthful laying condition.

Prior to the time that Mr. Pearson came to the New Haven it had been generally considered that the preponderance of passenger traffic, the nature of the grades of the road and configuration of the lines precluded the possibility of the use of heavy locomotives and the successful working out of any plan for greatly increasing the average train load. Mr. Pearson, however, undertook to buy heavier locomotives and to work out a scheme for increasing the train load and reducing freight train miles. Apparently he is doing this successfully. In 1916, when he went to the road, ton miles amounted to approximately 26,000,000,000. In 1919 ton miles amounted to 34,000,000,000. In 1916 freight train miles totaled 7,200,000 and in 1919 had been reduced to 6,000,000. This result was accomplished largely through the use of heavier locomotives and improved operating methods with the facilities, other than locomotives, that had previously been provided.

The New Haven is now at work building two very improved freight yards—one at Cedar Hill, Conn., and the other at Providence, R. I. Regarding these, Mr. Pearson says: "The terminal at Cedar Hill, when completed, will enable the receipt of trains however made up and of cars whatever their loading, from all directions, their proper classification and re-loading, and then the forwarding in straight trains properly made up and cars properly loaded for destination to every important gateway and commercial center on the system. The Providence terminal will perform corresponding service with a similar benefit to the Lines East. Large advantages will accrue from decrease in cost of train and terminal service and in car hire.

The following tables show the principal figures for the operating of the property during 1919 and 1918. This is not a corporate income account:

	1919	1918
Average mileage operated.....	1,966	1,992
Freight revenue	\$49,236,963	\$50,721,288
Passenger revenue	44,774,218	39,379,917
Total operating revenues.....	106,545,120	102,294,112
Maintenance of way and structures.....	14,280,055	13,525,534
Maintenance of equipment.....	21,377,447	20,913,413
Traffic expenses	541,089	475,232
Transportation expenses	51,147,509	48,020,080
General expenses	3,283,635	3,087,451
Total operating expenses	92,473,381	87,746,523
Taxes	3,770,657	3,216,376
Operating income	10,273,265	11,315,322
Federal net income	10,222,751*	8,926,839

*The increase here shown is due to a credit to the income account of the government of \$3,293,369 in 1919 for items prior to January 1, 1918, whereas in 1918 a credit was given the government for like items of only a little over \$1,000,000.

CORPORATE INCOME ACCOUNT.

	1919	1918
Rental	\$17,250,849	\$17,095,885
Gross income	23,735,594	22,735,594
Net income	2,397,460	2,043,526

Items prior to January 1, 1918.....

3,274,520

1,138,984

The Award of the Railroad Labor Board

Railway Employees Granted Flat Monetary Increases Totaling \$600,000,000 Annually

THE UNITED STATES RAILROAD LABOR BOARD, in its decision in the controversy over wage and working conditions of railway employees, rendered July 20, awarded the various classes of employees flat increases in wages averaging approximately 21 per cent above the rates now being paid, and adding about \$600,000,000 to the annual payroll. The award does not dispose of the many questions regarding working conditions which the brotherhoods interwove with their requests for increased compensation. Such subjects as the payment of overtime for Sunday and holiday work, the continuation or elimination of the National Shop Agreement, the application of the award to the various "outlaw" organizations, and kindred subjects are left for future determination. The separation of these two phases of the controversy by the Board was made on the assumption that adequate investigation and consideration of these questions would demand much time and that because of the existing tense labor situation it was desirable to make as early a decision of the wage question as practicable and deal with the other problems at a later date.

In making its award some differentials between the wages of different classes of employees which have been a source of dissatisfaction were partially adjusted. For instance, the differential which has existed for some time between the wages paid car repairmen and switchmen, giving the former a decidedly higher rate of pay than the latter, has been changed so that under the new award switchmen and their helpers are to be paid the same or better rates than car repairmen. The car repairmen are granted an increase of 13 cents an hour, bringing their hourly wage from 68 cents to 81 cents, or an advance of 19 per cent. The switchmen's rate is advanced from \$5.33 to \$6.96 and helpers from \$5.00 to \$6.48, or increases of approximately 30 per cent.

The actual additions to the total payroll of the larger classes of employees (allowing nothing for overtime) are estimated as follows:

	Approximate percentage increase
Yardmasters and train despachers.....	\$4,767,357
Clerks	103,920,176 25
Maintenance of way employees.....	160,297,568 25
Mechanics and shop laborers.....	139,237,215 19%
Agents and telegraphers.....	21,281,669 23
Enginemen	65,025,012 23
Trainmen	91,561,335 23
Marine employees	250,000
Total.....	\$586,340,336

These figures are, of course, group figures and do not reflect the fact that the award of the Board has treated the applications of the lower paid employees much more favorably than those of the higher paid employees.

After stating that a number of carriers, including many of the short lines, are not parties to this award and outlining the origin and nature of the controversy, which has been previously covered in the columns of the *Railway Age*, the introduction to the Board's decision reads:

In arriving at its decision, the Board has taken into consideration, as the Transportation Act prescribes:

- "(1) The scale of wages paid for similar kinds of work in other industries;
- "(2) The relation between wages and the cost of living;
- "(3) The hazards of the employment;
- "(4) The training and skill required;
- "(5) The degree of responsibility;

"(6) The character and regularity of the employment, and

"(7) Inequalities of increase in wages or of treatment, the result of previous wage orders or adjustments."

Besides the circumstances set out above the Act provides the Board shall consider in determining wages "other relevant circumstances." This, it understands, comprehends, among other things, the effect the action of this Board may have on other wages and industries, on production generally, the relation of railroad wages to the aggregate of transportation costs and requirements for betterments, together with the burden imposed on the entire people of railroad transportation charges.

The Board has been unable to find any formula which applied to the facts would work out a just and reasonable wage for the many thousands of positions involved in this dispute. The determination of such wages is necessarily a matter of estimate and judgment in view of all the conditions; a matter on which individuals will differ widely as their information or lack of it, their interest, situation and bias may influence them.

Those persons who consider the rates determined on herein too high should reflect on the abnormal conditions resulting from the high cost of living and the high rates now being paid in other industry. The employees who may believe these rates too low should consider the increased burden these rates will place on their fellow countrymen, many of whom are less favorably situated than themselves.

The Board has considered the seven circumstances suggested by the Act. "The hazards of the employment," "the training and skill required" and "the degree of responsibility" were well presented by the representatives of the employees and of the carriers. These factors are recognized by all and have had due weight. With reference to "the character and regularity of the employment," the Board finds that with few exceptions railroad employment is more regular, and the character of the work is more desirable than like occupations outside. As a rule railroad employees are such for life and usually remain for years with the same company. This permanence of employment has certain advantages which have been considered by the Board. As to "inequalities of increases in wages or of treatment the result of previous wage orders or adjustments" the urgency of prompt action has made elaborate investigation into this factor impracticable. It has, however, been considered. With regard to "the scale of wages paid for similar kinds of work in other industries," and "the relation between wages and the cost of living," the Board has been under some difficulty. It is clear that the cost of living in the United States has increased approximately one hundred per cent since 1914. In many instances the increases to employees herein fixed, together with prior increases granted since 1914, exceed this figure. The cost of living and wages paid for similar kinds of work in other industries, however, differ as between different parts of the country. Yet standardization of pay for railroad employees has proceeded so far and possesses such advantages that it was deemed inexpedient and impracticable to establish new variations based on these already variable conditions.

For the reasons stated it was necessary to adopt the method of determining what, if any, increases over existing wages (established under the authority of the United States Railroad Administration) would constitute a reasonable and just

wage for the hundreds of classifications of railroad employees. By so doing such differences in present rates as are the result of local differences are preserved together with (in general) the differentials between different classes of employees which have come about in the railroad service and which may be considered *prima facie* to be based on good reason. It is believed that this method accomplishes that approximation to justice which is practicable in human affairs.

The Board has endeavored to fix such wages as will provide a decent living and secure for the children of the wage earners opportunity for education, and yet to remember that no class of Americans should receive preferred treatment and that the great mass of the people must ultimately pay a great part of the increased cost of operation entailed by the increase in wages determined herein.

It has been found by this Board generally that the scale of wages paid railroad employees is substantially below that paid for similar work in outside industry, that the increase in living cost since the effective date of General Order 27 and its supplements has thrown wages below the pre-war standard of living of these employees and that justice as well as the maintenance of an essential industry in an efficient condition require a substantial increase to practically all classes.

The American people desire and must have transportation adequate to their needs. They also wish to do justice to men employed in the public service whether on public utilities or otherwise. Wage scales which are insufficient to attract or support men of the character necessary for railroad work constitute waste and extravagance and not economy. Transportation cannot be efficient unless the personnel throws itself into its work with the devotion which public service ought to inspire and no such devotion can exist in the minds of men who feel themselves treated with injustice. It is hoped that the present decision which adds substantial amounts to present wages will be felt to be just and equitable under all the circumstances and railroad employees will accordingly render the best service of which they are capable. If they will do this, it is believed the American people will receive benefits far outweighing the cost of the increases decided upon herein.

It is believed that if the keen intelligence of railroad employees and managers alike is fired by an eagerness to serve the people and a spirit of co-operation to that end is brought about, such economies of material and labor, such improvements in method and workmanship, such solutions of transportation problems will result as will offset a great part of the increase of wages provided for herein and that the people will thus be relieved of a part of the burden of these increases. They deserve and have a right to expect this spirit.

During the hearings, the "International Association of Railroad Supervisors of Mechanics," and "The American Train Dispatchers' Association" have been made parties to this dispute. In granting hearings to them, this Board has not assumed or decided any question of jurisdiction between the several organizations or associations either parties to or outside of this dispute.

There are in the dispute as presented questions involving rules and working conditions, some of which are interwoven with and materially affect earnings and wages. Adequate investigation and consideration of these questions would demand time. Existing conditions required that the Board should make as early decision of the wage question as practicable. For that reason, it has been necessary,—and both parties to the controversy have indicated it to be their judgment and wish, that the Board should separate the questions involving rules and working conditions from the wage questions. Accordingly, the Board has not undertaken herein to consider or change the rules and agreements now existing or in force by the authority of the United States Railroad

Administration or otherwise and this decision will be so understood and applied.

The Board assumes as the basis of this decision the continuance in full force and effect of the rules, working conditions and agreements in force under the authority of the United States Railroad Administration. Pending the presentation, consideration and determination of the questions pertaining to the continuation or modification of such rules, conditions and agreements no changes therein shall be made except by agreement between the carrier and employees concerned. As to all the questions with reference to the continuation or modification of such rules, working conditions and agreements, further hearings will be had at the earliest practicable date and decision thereon will be rendered as soon as adequate consideration can be given.

It is further declared that this Board, finding it necessary to adopt a basis for the rates and advances decided on, has adopted the rates established by or under the authority of the United States Railroad Administration. The intent of this decision is that the named increase except as otherwise stated shall be added to the rate of compensation established by and under the authority of the United States Railroad Administration.

The decision of the Board is the result of the action of the Board, composed of nine members acting as a body, under the usual parliamentary methods of procedure and its own rules. Each and every separate question was considered and voted upon—each and every rate for each class was voted upon and adopted by a majority vote of the Board, and in every instance one or more of the public group, as the law requires, voted in the affirmative on any classification or rate adopted.

In a problem so complex and involving the inter-relationship of the wages of so many different classes of employees, it is obvious that there could not be unanimous agreement among all the members of the Board on all increases fixed by this decision; but inasmuch as the several increases hereinafter set forth represent, in each instance, the best judgment of the majority of the Board it is believed that no useful purpose would be served by setting forth the views held by the members who for one or another reason dissented from particular increases. This statement is made in order that it may not be inferred that the decision, in all its details, states the precise increase which any one of the members hereof might have stated if he had the sole power and responsibility for fixing such increase.

This Board estimates that the increase in wages herein provided for will impose on the railroads an addition to the payroll of March 1, 1920, aggregating approximately six hundred millions of dollars per annum.

The Board appreciates that some time will necessarily be required for computing back pay from May 1. This is work of a kind which must be done by regular employees, familiar with the classifications, rates and rules.

The Board believes that the railroads will proceed with diligence in the matter. It urges upon them that there be no unnecessary delay; and it urges equally upon the employees that they exercise patience and refrain from unreasonable pressure or criticism.

The Board decides upon the present dispute and submission that the rates of increase set out below, added and applied to the rates established for the positions specified by or under the authority of the United States Railroad Administration, constitute, for the said positions on carriers named herein, a just and reasonable wage.

The Board also decides that the rates set out below constitute for the positions specified on carriers named herein a just and reasonable wage.

Article I gives in detail the names of the various railroads affected. The other articles follow:

ARTICLE II.—CLERICAL AND STATION FORCES.

Add to the rates established by or under the authority of the United States Railroad Administration for each of the hereinafter named classes, the following amounts per hour:

Sec. 1. Storekeepers, assistant storekeepers, chief clerks, foremen, sub-foremen and other clerical supervisory forces.....13 cents.

Sec. 2. Clerks with an experience of one (1) or more years in railroad clerical work, or clerical work of a similar nature in other industries, or where their cumulative experience in such clerical work is not less than one (1) year.....13 cents.

Sec. 3. Clerks whose experience as above defined is less than one (1) year, and until an experience of one (1) year in such work entitles them to the increase provided for in Section 2.....6½ cents.

Sec. 4. Train and engine crew callers, assistant station masters, train announcers, gatemen and baggage and parcel room employees (other than clerks).....13 cents.

Sec. 5. Janitors, elevators and telephone switchboard operators, office station and warehouse watchmen, and employees engaged in assorting way bills and tickets, operating appliances or machines for perforating, addressing envelopes, numbering claims and other papers, gathering and distributing mail, adjusting dictaphone cylinders and other similar work..10 cents.

Sec. 6. Office boys, messengers, chore boys and other employees under eighteen years of age, filling similar positions, and station attendants.5 cents.

Sec. 7. Station, platform, warehouse, transfer, dock, pier, store-room, stockroom and team-track freight handlers or truckers, and others similarly employed.....12 cents.

Sec. 8. The following differentials shall be created or maintained, as the case may be, between truckers and the classes named below:

(a) Scalers, scalers and fruit and perishable inspectors, one (1) cent per hour above truckers' rates as established under Section 7.

(b) Stowers or stevedores, callers or loaders, locators and coopers, two (2) cents per hour above truckers' rates as established under Section 7.

The above shall not operate to decrease any existing higher differentials.

Sec. 9. All common laborers in and around stations, storehouses and warehouses, not otherwise provided for.....8½ cents.

ARTICLE III.—MAINTENANCE OF WAY AND STRUCTURES AND UNSKILLED FORCES SPECIFIED

Add to the rates established by or under the authority of the United States Railroad Administration, for each of the hereinafter named classes, the following amounts per hour:

Sec. 1. Building, bridge, painter, construction, mason and concrete, water supply, and plumber foremen, except such water supply, and plumber foremen as were paid under the provisions of Supplement No. 4 to General Order No. 27.....15 cents.

Sec. 2. Assistant building, bridge, painter, construction, mason and concrete, water supply, and plumber foremen, and for coal wharf, coal chute, and fence gang foremen, pile driver, ditching and hoisting engineers and bridge inspectors, except such assistant water and plumber foremen as were paid under the provisions of Supplement No. 4 to General Order No. 27.....15 cents.

Sec. 3. Section, track and maintenance foremen, and assistant section, track and maintenance foremen.....15 cents.

Sec. 4. Mechanics in the maintenance of way and bridge and building departments, except those that come under the provisions of the national agreement with the Federated Shop Trades.....15 cents.

Sec. 5. Mechanics' helpers in the maintenance of way and bridge and building departments, except those that come under the provisions of the national agreement with the Federated Shop Trades.....8½ cents.

Sec. 6. Track laborers, and all common laborers in the maintenance of way department and in and around shops and roundhouses, not otherwise provided for herein.....8½ cents.

Sec. 7. Drawbridge tenders and assistants, pile-driver, ditching and hoisting firemen, pumper engineers and pumpers, crossing watchmen or flagmen, and lamp lighters and tenders.....8½ cents.

Sec. 8. Laborers employed in and around shops and roundhouses, such as engine watchmen and wipers, fire builders, ash-pit men, flue borers, coal passers (except those coming under the provisions of Article VIII, Section 3, this decision), coal chute men, etc.....10 cents.

ARTICLE IV.—SHOP EMPLOYEES

Add to the rates established by or under the authority of the United States Railroad Administration, for each of the hereinafter named classes, the following amounts per hour:

Sec. 1. Supervisory forces.....13 cents.

Sec. 2. Machinists, boilermakers, blacksmiths, sheet metal workers, electrical workers, carmen, moulders, cupola tenders and coremakers, including those with less than four years' experience, all crafts.....13 cents.

Sec. 3. Regular and helper apprentices and helpers, all classes..13 cents.

Sec. 4. Car cleaners.....5 cents.

ARTICLE V.—TELEGRAPHERS, TELEPHONERS AND AGENTS

Add to the rates established by or under the authority of the United States Railroad Administration, for each of the hereinafter named classes, the following amounts per hour:

Sec. 1. Telegraphers, telephone operators (except switchboard operators), agents (except agents at small non-telegraph stations as referred to in Supplement No. 13 to General Order No. 27, Article IV, Section c), agent telegraphers, agent telephoners, towermen, lever men, tower and train directors, block operators and staffmen.....10 cents.

Sec. 2. Agents at small non-telegraph stations as referred to in Supplement No. 13 to General Order No. 27, Article IV, Section (c).5 cents.

ARTICLE VI.—ENGINE SERVICE EMPLOYEES

Add to the rates established by or under the authority of the United States Railroad Administration, for each of the hereinafter named classes, the following amounts per mile, per hour, or per day, as the case may be, except in Section 4, as noted:

SEC. 1.—PASSENGER SERVICE.

Class	Per mile, cents	Per day
Engineers and motormen.....	.8	\$0.80
Firemen (coal or oil).....	.8	.80
Helpers (electric) .....	.8	.80

SEC. 2.—FREIGHT SERVICE

Class	Per mile, cents	Per day
Engineers (steam, electric or other power).....	1.04	\$1.04
Firemen (coal or oil).....	1.04	1.04
Helpers (electric)	1.04	1.04

SEC. 3.—YARD SERVICE

Class	Per hour, cents
Engineers	18
Firemen (coal or oil).....	18
Helpers (electric)	18

SEC. 4.—HOSTLER SERVICE

Note.—Superseding rates established by or under the authority of the United States Railroad Administration, and in lieu thereof, for each of the hereinafter named classes, the following increased rates are established:

Class	Per day
Outside hostlers	\$6.24
Inside hostlers	5.60
Helpers	5.04

ARTICLE VII.—TRAIN SERVICE EMPLOYEES

Add to the rates established by or under the authority of the United States Railroad Administration, for each of the hereinafter named classes, the following amounts per mile, per day, or per month, as the case may be, except in Section 4, as noted:

SEC. 1.—PASSENGER SERVICE

Class	Per mile, cents	Per day	Per Month
Conductors .....	.67	\$1.00	\$30.00
Assistant conductors or ticket collectors.....	.67	1.00	30.00
Baggage men handling both express and dynamo..	.67	1.00	30.00
Baggagemen operating dynamo.....	.67	1.00	30.00
Baggagemen handling express.....	.67	1.00	30.00
Baggagemen .....	.67	1.00	30.00
Flagmen and brakemen.....	.67	1.00	30.00

SEC. 2.—SUBURBAN SERVICE (EXCLUSIVE)

Class	Per mile, cents	Per day	Per Month
Conductors .....	.67	\$1.00	\$30.00
Ticket collectors .....	.67	1.00	30.00
Guards performing duties of brakemen or flagmen .....	.67	1.00	30.00

SEC. 3.—FREIGHT SERVICE

Class	Per mile, cents	Per day
Conductors (through)	1.04	\$1.04
Flagmen and brakemen (through).....	1.04	1.04
Conductors (local or way freight).....	1.04	1.04
Flagmen and brakemen (local or way freight).....	1.04	1.04

SEC. 4.—YARD SERVICE

Class	Per day
Foremen	\$6.96
Helpers	6.48
Switchtenders	5.04

ARTICLE VIII.—STATIONARY ENGINE (STEAM) AND BOILER ROOM EMPLOYEES

Add to the rates established by or under the authority of the United States Railroad Administration, for each of the hereinafter named classes, the following amounts per hour:

Sec. 1. Stationary engineers (steam).....13 cents.

Sec. 2. Stationary firemen and engine room oilers.....13 cents.

Sec. 3. Boiler room water tenders and coal passers.....10 cents.

ARTICLE IX.—SIGNAL DEPARTMENT EMPLOYEES

Add to the rates established by or under the authority of the United States Railroad Administration, for each of the hereinafter named classes, the following amounts per hour:

Sec. 1. Signal foremen, assistant signal foremen and signal inspectors

Sec. 2. Leading maintainers, gang foremen and leading signalmen

Sec. 3. Signalmen, assistant signalmen, signal maintainers and assistant signal maintainers

Sec. 4. Helpers

ARTICLE X.—MASTERS, MATES AND PILOTS

Superseding rates established by or under the authority of the United States Railroad Administration, and in lieu thereof, for each of the hereinafter named classes, the following increased rates are established; provided, that these increases shall be applied only to railroad operated car floats, lighters and ferries and railroad operated tug boats propelling railroad operated car floats, lighters and ferries.

SEC. 1.—NEW YORK HARBOR		Per month	Southern Pacific "Mastodon"—		230.00
Ferryboats—			One master	220.00	
Masters, pilots or captains.....	\$220.00		Two masters	220.00	
Mates or first officers.....	150.00		Southern Pacific "El Vivo" and El Listo"—		
Tugboats and Steam Lighters—			Pilots	155.00	
Masters, pilots or captains.....	220.00		Southern Pacific "Restless"—		
Pilots (South Amboy, Perth Amboy and Port Reading coal tow-	200.00		Masters	180.00	
ing lines)	150.00		Captains	230.00	
Mates			Pilots	220.00	
SEC. 2.—PHILADELPHIA, CAMDEN AND WILMINGTON DISTRICT		Gulf Coast Lines "B. F. Yoakum"—			
Ferryboats—		One master	230.00		
Masters or pilots (regular).....	(a) \$190.30	Two masters	220.00		
Extra pilots (promoted).....	(a) 150.22	Texas and Pacific "L. S. Thorne" and "Gouldsboro"—			
Tugboats—		Master	230.00		
Masters or captains.....	(a) 150.96	Pilots	220.00		
Mates	(a) 111.00	Mates	140.00		
(a) Based on 8 hours per day.		Captains			
SEC. 3.—NEW ORLEANS, ANCHORAGE, BATON ROUGE, VICKSBURG, DELTA POINT, AVONDALE, ALGIERS, HARAHAN AND GOULDSBORO DISTRICT		SEC. 4.—NEWPORT NEWS, HAMPTON ROADS AND NORFOLK DISTRICT			
Southern Pacific "Carrier"—		New York, Philadelphia & Norfolk Railroad Bay Freight Service, Tugs "Cape Charles," "Parksley," "Delmar," "Pocomoke," "Salisbury," "Crisfield," "Portsmouth" and "Norfolk"—			
One master-pilot	230.00	Captains	\$250.00		
Two master-pilots	220.00				

The following table shows in detail the advances in wages that the award gives to all the various classes of employees:

I. C. C. classification No.	Class	Hours worked month of October, 1919	Hours worked year 1919	Annual increase which would result by adding 1 cent per hour	Increase per hour	Annual increase which would result by multiplying column No. 5 by column 6
(1)	(2)	(3)	(4)	(5)	(6)	(7)
5 and 6	Clerks	49,546,334	538,568,650	\$5,385,686.50	.13	\$70,013,924
7	Messengers and attendants	2,340,344	25,439,539	254,395.39	.05	1,271,977
8	Assistant engineers and draftsmen	2,215,504	24,082,528	240,825.28	.13	3,130,728
9	M. W. and S. foremen (exc. 10 and 28)	1,904,788	20,704,828	207,048.28	.15	3,105,724
10	Section foremen	9,914,376	102,334,267	1,023,342.67	.15	15,350,140
11	General foremen—M. E. Department	411,648	4,474,613	44,746.13	.13	581,700
12	Gang and other foremen—M. E. D.	5,707,200	62,037,264	620,372.64	.13	8,064,844
13	Machinists	13,799,156	149,996,825	1,499,168.25	.13	19,489,187
14	Boilermakers	4,356,686	47,357,176	473,571.76	.13	6,156,433
15	Blacksmiths	2,254,394	24,505,262	245,052.62	.13	3,185,684
16	Masons and Bricklayers	256,662	2,789,916	27,899.16	.15	418,487
17	Structural Iron Workers	131,079	1,424,828	14,248.28	.15	213,724
18 (a)	Carpenters	6,462,016	70,242,113	702,421.13	.15	10,536,317
18 (b)	Car builders	5,112,649	55,574,494	555,744.94	.13	7,224,684
19	Painters and upholsterers	2,836,072	30,828,002	308,280.02	.13	4,007,640
20	Electricians	3,004,040	32,653,914	326,539.14	.13	4,245,009
21	Air Brakemen	1,933,975	21,122,308	211,223.08	.13	2,745,900
22	Car inspectors	6,185,888	67,240,602	672,406.02	.13	8,741,278
23	Car repairers	20,954,172	227,791,849	2,277,718.49	.13	29,610,340
24 (a)	Other skilled laborers	11,988,081	130,310,346	1,303,103.46	.13	16,940,345
24 (b)	Car builders	1,332,000	14,476,937	144,769.37	.13	1,882,002
25	Mechanics' helpers and apprentices	26,092,289	283,623,181	2,836,231.81	.13	3,687,014
26	Sectionmen	61,844,626	672,251,084	6,722,510.84	.08½	57,141,342
27	Other unskilled laborers	26,924,929	292,674,678	2,926,746.78	.08½	24,877,348
28	Foremen, construction gangs and work trains	456,651	4,963,796	49,637.96	.15	744,570
29	Other men, construction gangs and work trains	6,622,146	71,982,727	719,827.27	.08½	6,118,532
30	Traveling agents and solicitors	293,784	3,193,432	31,934.32	.13	415,146
31	Employees in outside agencies	177,264	1,926,860	19,268.60	.13	250,492
32	Other traffic employees	92,208	1,002,301	10,023.01	.13	130,300
33	Train despachers and directors	1,352,591	16,002,664	147,026.64	.13	1,911,346
34	Telegraphers, telephoners and block operators	5,086,105	55,285,961	552,859.61	.10	5,528,596
35	Telegraphers, telephoners operating interlocker	1,886,604	20,507,385	205,073.85	.10	2,050,738
36	Levermen (non-telegraphers)	912,950	9,923,766	99,237.66	.10	992,376
37	Telegraphers-clerks	2,784,270	30,265,015	302,650.15	.10	3,026,501
38	Agent-telegraphers	4,694,015	51,023,943	510,239.43	.10	5,102,394
39	Station agents (non-telegraphers)	3,255,416	35,386,372	353,863.72	.10	3,538,637
40	Station masters and assistants	144,952	1,575,628	15,756.28	.13	204,832
41	Station service employees, exc. 5, 6, 37, 38, 39, 40 and 66	28,453,787	309,292,665	3,092,926.65	.13	40,208,046
42	Yardmasters	951,952	10,347,718	103,477.18	.15	1,552,158
43	Yardmasters' assistants (not yard clerks)	797,520	8,669,042	86,690.42	.15	1,300,356
44	Yard engineers and motormen	5,267,481	57,257,518	572,575.18	.18	10,306,333
45	Yard firemen and helpers	5,235,581	56,910,765	569,107.65	.18	10,243,938
46	Yard conductors (or foremen)	5,159,218	56,080,700	560,807.00	.20¾	11,426,443
47	Yard brakemen (or helpers)	12,590,054	136,853,887	1,368,538.87	.18½	25,317,969
48	Yard switch tenders	1,534,368	16,678,580	166,785.80	.13	2,168,215
49	Other yard employees	1,169,549	12,712,998	127,129.98	.13	1,652,690
50	Hostlers	2,719,200	29,557,704	295,577.04	.18	5,320,387
51	Enginehousemen	18,032,222	196,010,253	1,960,102.53	.10	19,601,025
52	Road freight engineers and motormen	8,836,590	91,016,959	910,169.59	.13	11,832,205
53	Road freight firemen and helpers	8,913,702	91,811,131	918,111.31	.13	11,935,447
54	Road freight conductors	7,594,941	78,227,892	782,278.92	.13	10,169,626
55	Road freight brakemen and flagmen	18,174,719	187,199,606	1,871,996.06	.13	24,335,949
56	Road passenger engineers and motormen	2,691,839	32,302,060	323,020.60	.16	5,168,330
57	Road passenger firemen and helpers	2,577,134	30,925,608	309,256.08	.16	4,948,097
58	Road passenger conductors	2,406,572	28,878,864	288,788.64	.13½	3,849,553
59	Road passenger baggagemen	1,281,293	15,375,480	153,754.80	.13½	2,049,551
60	Road passenger brakemen and flagmen	3,377,661	40,531,932	405,319.32	.13½	5,402,906
61	Other road train employees	836,315	10,035,780	100,357.80	.13	1,304,651
62	Crossing flagmen and gatemen	5,627,200	61,167,664	611,676.64	.08½	5,199,651
63	Drawbridge operators	404,032	4,391,828	43,918.28	.08½	373,305
64	Floating equipment employees	2,226,094	24,197,641	241,976.41	.08½	2,056,800
65	Express service employees					
66	Policemen and watchmen	2,828,480	30,745,578	307,455.78	...	
67	Other transportation employees	1,165,880	12,673,116	126,731.16	.13	1,647,505
68	All other employees	4,631,560	50,345,057	503,450.57	.13	6,544,857
Total		450,252,785	4,894,247,772	\$48,942,477.72	...	\$591,735,844

Note.—Actual figures were available for October, 1919, but not for the entire year 1919. Freight and mixed train miles for October were 9.7 per cent of such mileage for the year. Passenger mileage for October was 8.8 per cent of the mileage for the year. Average freight and passenger mileage for October was 9.2 per cent of the year. Therefore, in arriving at the annual hours for 1919, the following basis was used:

Engine and train service—Freight, October hours times 10.30.

Engine and train service—Passenger, October hours times 12.

All other service, average figure, viz., October times 10.87 was used.

Classification No. 18 has been divided into (a) carpenters in Maintenance of Way Department, which according to records of Board of Railroad Wages and Working Conditions are 53 per cent of the total, and (b) carpenters in the Maintenance of Equipment Department, or car builders, who comprise about 47 per cent of the total.

Classification No. 24 has been divided into (a) "Other skilled laborers," and (b) carmen (covering car builders, truck builders, tank builders, tender repairmen, etc.) which latter classes it is estimated comprise about 10 per cent of the total.

New York, Philadelphia and Norfolk Railroad Barges, 2, 4, 5 8, 9, 10, 14, 16, 17, 18—	
Captains	210.00
New York, Philadelphia & Norfolk Railroad Tug "Philadelphia"—	
Captains	191.75
Chesapeake & Ohio Railroad Tugs "Greer," "Alice," "Hinton," "Wanderer" and "Helen"—	
Mates	160.00
Norfolk Southern Railroad Tug—	
Master (day)	160.00
Captain (night)	150.00
Chesapeake & Ohio Railroad Steamer "Virginia"—	
Master and pilot	215.00
First mate	160.00
Second mate	160.00
Southern Railroad Ferry Steamer and Tug—	
Captain (day)	190.00
Captain (night)	180.00
Mate	160.00
Mate	145.00
Atlantic Coast Line Railroad Tugs "Norfolk" and "Pinnacles Point"—	
Captain (day)	190.00
Captain (night)	180.00
Atlantic Coast Lines Railroad Passenger Barge—	
Masters	122.32
SEC. 5.—PORT OF BALTIMORE	
Baltimore & Ohio Railroad Tug "Liverpool"—	
Masters	201.00
Mates	147.00

ARTICLE XI.—OTHER SUPERVISORY FORCES

Add to the rates established by or under the authority of the United States Railroad Administration, for each of the hereinafter named classes, the following amounts per hour:

Sec. 1. Train despatchers	13 cents.
Ses. 2. Yard masters and assistant yard masters.....	15 cents.

ARTICLE XII.—MISCELLANEOUS EMPLOYEES

Add to the rates established by or under the authority of the United States Railroad Administration, for employees in the hereinbefore named departments who are properly before the Board and not otherwise provided for, an amount (as per Section 3, Article XIII) equal to that established for the respective classes to which the miscellaneous classes herein referred to are analogous. The intent of this article is to extend this decision to a miscellaneous class of supervisors and employees, practically impossible of specific classification, and at the same time to insure to them the same consideration and rate increase as provided for analogous service.

ARTICLE XIII.—GENERAL APPLICATION

Sec. 1. The increases in wages and the rates hereby established shall be effective as of May 1, 1920, and are to be paid according to the time served to all who were then in the carriers' service and remained therein, or who have since come into such service and remained therein.

Sec. 2. The provisions of this decision will not apply in cases where amounts less than thirty dollars (\$30.00) per month are paid to individuals for special service which takes only a portion of their time from outside employment or business.

Sec. 3. Increases specified in this decision are to be added to the hourly rates as established by or under the authority of the United States Railroad Administration for employees now being paid by the hour. For employees paid by the day, add eight times the hourly increase specified to the daily rate. For employees paid by the month, add two hundred and four (204) times the hourly rate specified to the monthly rate.

Sec. 4. Each carrier will in payment to employees on and after August 1, 1920, include therein the increases in wages and the rates hereby established.

Sec. 5. The amounts due in back pay from May 1, 1920, to July 31, 1920, inclusive, in accordance with the provisions of this decision, will be computed and payment made to the employees separately from the regular monthly or semi-monthly payments, so that employees will know the exact amount of their back payments:

Recognizing the clerical work necessary to make these computations for back pay and the probable delay before the entire period can be covered, each month, beginning with May, 1920, shall be computed as soon as practicable, and as soon as completed, payment shall be made.

Sec. 6. The increases in wages and the rates hereby established shall be incorporated in and become a part of existing agreements or schedules.

Sec. 7. Except as specifically modified herein, the rules regulating payments of overtime or working conditions in all branches of service, and the established and accepted method of computing time and compensation thereunder, shall remain in effect until or unless changed in the manner provided by the Transportation Act, 1920.

Sec. 8. It is not intended in this decision to include or fix rates for any officials of the carriers affected except that class designated in the Transportation Act of 1920, as "Subordinate Officials," and who are included in the act as within the jurisdiction of this Board. The Act provides that the term "Subordinate Officials" includes officials of carriers of such class or rank, as the Interstate Commerce Commission shall designate by regulation duly formulated and issued. Hence, whenever in this decision words are used, such as "foremen," "supervisor," etc., which may apply to officials as are now or may hereafter be defined and classified by the Interstate Commerce Commission as such subordinate officials.

ARTICLE XIV.—INTERPRETATION OF THIS DECISION

Sec. 1. Should a dispute arise between the management and the employees of any of the carriers as to the meaning or intent of this decision, which cannot be decided in conference between the parties directly interested, such dispute shall be referred to the United States Railroad Labor Board in the manner provided by the Transportation Act, 1920.

Sec. 2. All such disputes shall be presented in a concrete joint signed statement setting forth: (1) the article of this decision involved. (2) the

facts in the case. (3) the position of the employees, and (4) the position of the management thereon. Where supporting documentary evidence is used it shall be attached in the form of exhibits.

Sec. 3. Such presentations shall be transmitted to the Secretary of the United States Railroad Labor Board, who shall place same before the Board for final disposition.

By order of Chairman.

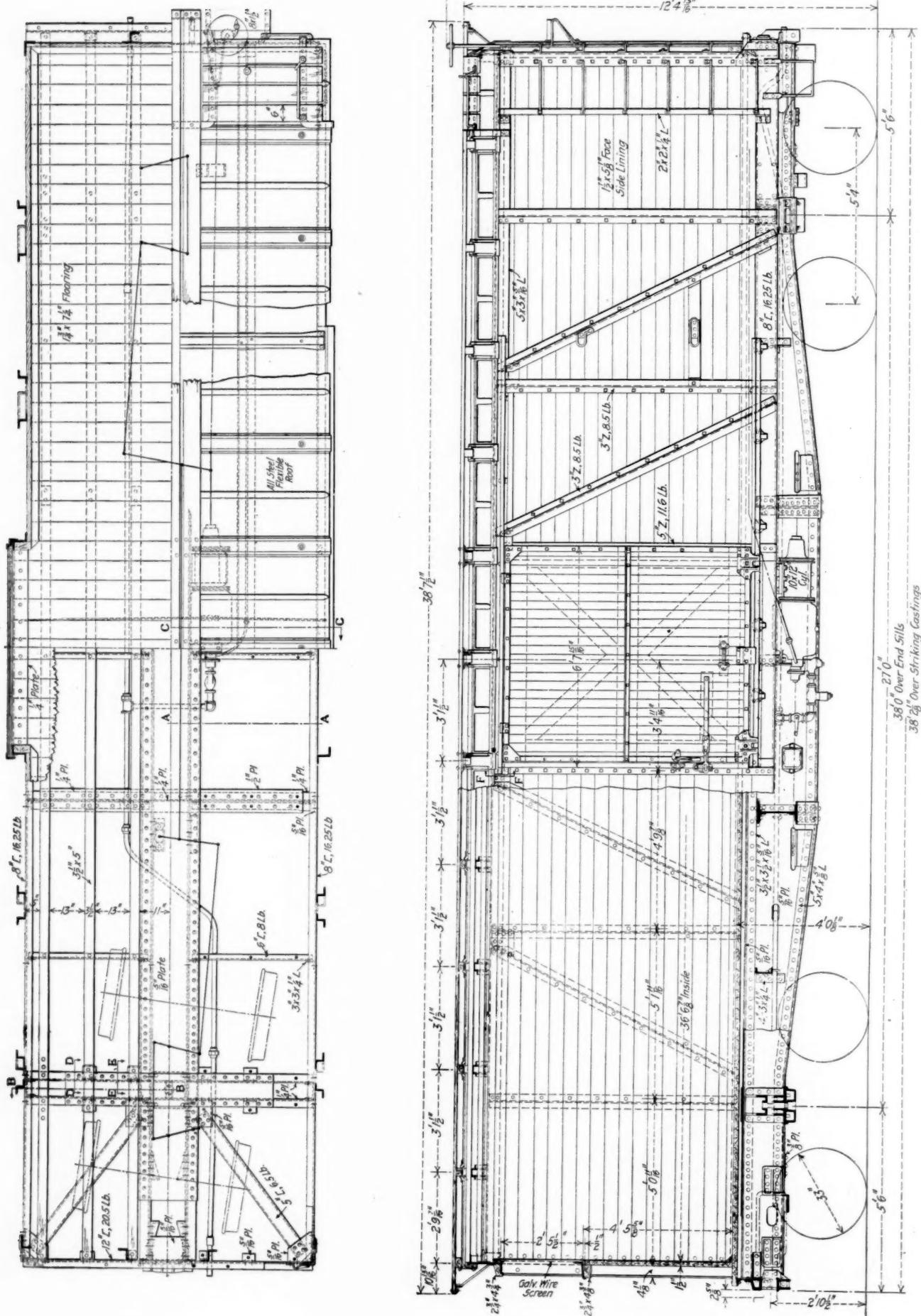
After sessions lasting all day Tuesday and Tuesday night, Wednesday and Wednesday night unanimous approval or disapproval of the Labor Board's award had not been reached. However, all but one of the organizations affected by the award had taken action. Seven unions, namely, the Brotherhood of Railway Trainmen, the Brotherhood of Locomotive Engineers, the United Brotherhood of Maintenance of Way Employees and Railroad Shop Laborers, the Switchmen's Union of North America, the Brotherhood of Locomotive Firemen and Enginemen and the Masters, Mates and Pilots of America had voted to accept the award outright.

The following organizations voted to refer the award to their respective memberships with recommendations of acceptance: The International Association of Machinists, the Sheet Metal Workers International Alliance, the Brotherhood of Railway and Steamship Clerks, Freight Handlers, Express and Station Employees, the Brotherhood of Railway Car Men of America, the International Brotherhood of Electrical Workers, the International Brotherhood of Boiler Makers, Iron Ship Builders and Helpers of America and the International Brotherhood of Blacksmiths, Drop Forgers and Helpers.

The Brotherhood of Railway Signalmen and the Employees Department of the American Federation of Labor voted to refer the award to the employees without recommendations. The Order of Railway Telegraphers rejected the decision and the Order of Railway Conductors failed to reach a decision.

Following the decision on the part of the brotherhoods affected, the Grand Council of Union Chiefs composed of a representative of each of the brotherhoods met to reach a concerted agreement on the award. However, because of the varying views they were unable to come to an agreement, being deadlocked on Thursday morning. Late Wednesday several of the organizations which are dissatisfied with the award appealed to the board to reopen the controversy but this appeal was immediately refused. All of the members of the board feel that the award is the result of their best efforts at this time and under the existing conditions. The only evidences so far reported of outlaw strikes of protest against the award have appeared in Chicago, where shopmen employed by the Grand Trunk refused to return to work Wednesday afternoon after a mass meeting. This move led to the extension of the strike talk to other shops in the Chicago district but it is believed that the ruling of the award which forbids the participation of the vacationist in its retroactive features has resulted in stabilizing the workers. Union leaders claim that the outlaw organizations have planted men in shops and in groups of workers throughout the country with instructions to take advantage of whatever dissatisfaction is expressed to induce the spread of the vacation idea. In general, reports coming to the brotherhood chiefs in Chicago indicate that the award is meeting with the approval of railway workers and it is believed that eventually it will be referred to the employees with recommendations for its acceptance and plans prepared to request further increases.

RAILROAD PRONUNCIATION.—The conductor and a brakeman on a Montana railroad differ as to the proper pronunciation of the name Eurelia. Passengers are often startled upon arrival at this station to hear the conductor yell: "You're a liar!" Then from the brakeman at the other end comes the cry: "You really are! You really are!"—*Boston Transcript*.



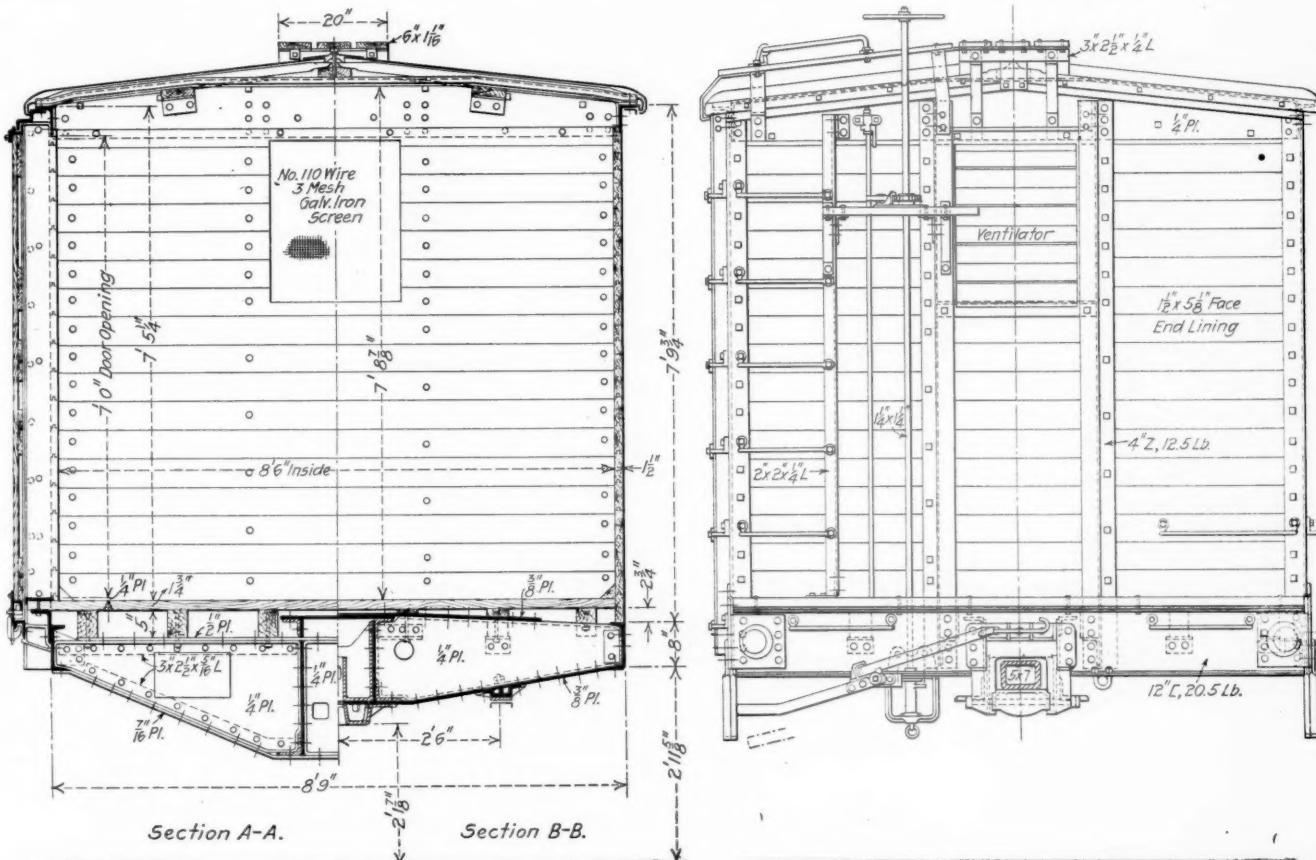
Plan and Side Elevation of Box Car for Cuba Railroad

Forty-Ton Box Cars for the Cuba Railroad

Single Sheathed Steel Frame Equipment Notable for Exceptionally Strong Construction

CAR EQUIPMENT for foreign railways is usually of interest by reason of the divergence from American standards of design. However, the Cuban Railroad has recently put into service some box cars which in strength and general design compare favorably with similar types in this country. These cars were designed and built by the American Car & Foundry Company. The first lot was recently completed and an additional order is now under construction. The cars are of the single sheathed type with steel underframes and steel superstructure. The nominal capacity is 36,400 kilos, or 80,247 lb., and the length over the end sills is 38 ft. 0 in. The light weight is approximately

by $\frac{1}{4}$ -in. angles. A steel top cover plate 5/16 in. thick and 21 in. wide is riveted over the greater portion of the center sill, extending to a point approximately over the center of the draft gear. The body bolsters consist of two $\frac{1}{4}$ -in. pressed steel diaphragms with 3-in. flanges all around, spaced six inches apart. Each bolster is reinforced at the top by a 12-in. by $\frac{3}{8}$ -in. cover plate, extending a short distance beyond the side bearings, and at the bottom by a 13-in. by $\frac{3}{8}$ -in. plate, extending the full width of the car. The bolsters have cast steel center plates and center fillers and malleable iron side bearings. The top of the bolsters slopes downward from the center sill and the top of the side sill



End Elevation and Sections of 40-Ton Box Car for Cuba Railroad

40,000 lb. The car body is 36 ft. 6 $\frac{7}{8}$ in. long inside, the inside height and width being 7 ft. 5 $\frac{1}{4}$ in., and 8 ft. 6 in., respectively.

Underframe

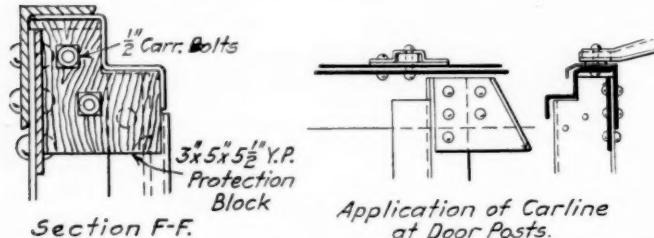
The underframe is built up of rolled shapes and plates, comparatively few pressed steel parts being used. The center sill is of the fishbelly type, consisting of two steel side numbers continuous between the end sills. They are made of 5/16-in. plates with top chords of 3 $\frac{1}{2}$ -in. by 3 $\frac{1}{2}$ in. by 5/16-in. angles and bottom chords of 5-in. by 4-in. by $\frac{5}{8}$ -in. angles with the long flanges placed horizontally. The sills are 2 $\frac{3}{4}$ in. deep for a length of 10 ft. 4 in. at the center and taper to 15 in. deep just inside of the body bolsters. The web plates are reinforced vertically with 4-in. by 3-in.

is 1 $\frac{3}{8}$ -in. lower than the top of the center sill. The side sill is of 8-in., 16 $\frac{1}{4}$ -lb. channel section and extends continuously from end sill to end sill.

There are two crossbearers, spaced 9 ft. 3 $\frac{1}{2}$ in. apart. Each consist of a $\frac{1}{4}$ -in. pressed open hearth steel diaphragm, flanged three inches wide on all sides. A filler of similar construction is placed between the center sills. The cross bearer is reinforced at the top and bottom with a 3-in. by 2 $\frac{1}{2}$ -in. by 5/16-in. rolled steel angle. The top cover plate is 3 in. by $\frac{1}{2}$ in. and extends through the center sill web plates. The bottom cover plate is 8 in. by 7/16 in. and extends continuously from side sill to side sill, passing under the center sill.

At the center of the car and midway between the body bolsters and crossbearers there are floor beams consisting of

6-in., 8-lb. channels, secured to the side and center sills by means of the vertical stiffening angles, and also by pressed angle connections, as shown in the sectional drawing. The end sills are 12-in., 20½-lb. channels and extend straight along the full section for the entire width of the car. A 5-in., 6½-lb. channel extends from the corner of the body bolster and center sill to the corner of the car, where it is attached to the side sill and end sill by means of flanged gusset plates.

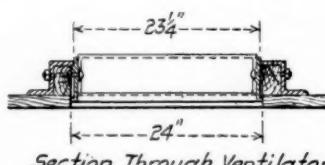


Side Plate Section at Floor and Arrangement of Roof Members

The draft gear is of the Cardwell friction type with Sharon couplers operated by the American Car & Foundry Company's direct-connected top operating uncoupling device.

Superstructure

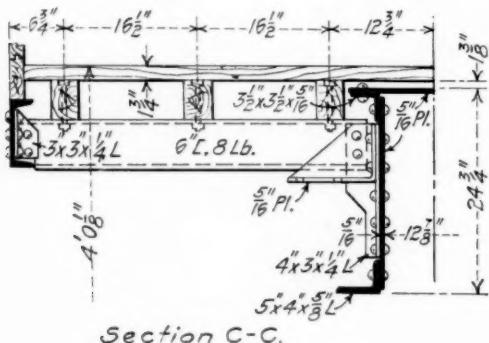
Both the vertical and horizontal intermediate members of the side truss are 3-in., $8\frac{1}{2}$ -lb. Z-bars, securely riveted to the side sill and to the side plate, which is a 5-in. by 3-in.



Section of End at Ventilator

by 5/16-in. angle with the short flange extending outward. The door posts are 5-in., 11.6-lb. Z-bars. A pressed steel section attached to the flange of the side plate serves as reinforcement over the door opening and also as weather protection for the door. The side sill is reinforced under the door opening by a 5 $\frac{3}{4}$ -in. by 3 $\frac{3}{4}$ -in. by 5/16-in. bent angle.

The corner posts are 5-in. by 4-in. by $\frac{3}{8}$ -in. rolled steel.



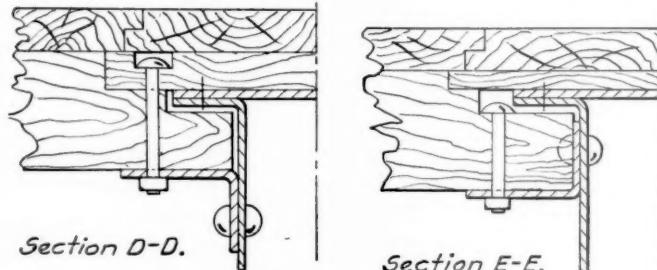
Section at Crossbearer

angles and are secured to the side sill by means of bent angle clips. At the upper end they are riveted to the side plate and the end plate, which is of $\frac{1}{4}$ -in. steel plate, shaped to suit the roof. There are two Z-bars and posts of 4-in. $12\frac{1}{2}$ -lb. section. Between the end posts, directly below the running board brackets, is placed a Wine shutter type ventilator. The Hutchins flexible all-steel roof is applied to these

cars. The steel car lines are riveted directly to the side plate. The detail of the application at the door posts is shown in the sectional view.

The side lining is $1\frac{1}{2}$ -in. by $5\frac{1}{8}$ -in. tongued and grooved yellow pine bolted to the steel frame. Floor stringers of 5-in. by $3\frac{1}{2}$ -in. yellow pine are applied over the floor beams and crossbearers, extending continuously between the end sills, the sections at the bolsters being arranged as shown in the drawing. There are three stringers on each side of the car and to them is secured the flooring, which is $1\frac{3}{4}$ -in. by $7\frac{1}{4}$ -in. yellow pine, ship lapped. Two and one-quarter inch beveled grain strips are applied around the sides and ends.

The side doors, which have a clear opening of six feet,



Arrangement of Stringers and Flooring at Bolster

are constructed of 13/16-in. yellow pine, tongued and grooved, with a 13/16-in. pine frame. The outside frame and crossbar are steel angles. The doors are fitted with Camel Company door fixtures, including bottom rollers, door starter and burglar-proof lock. Handholds, ladders and sill steps are all in compliance with the requirements of the federal safety appliance laws and the standards of the American Railroad Association. The air brakes are Westinghouse schedule KC-10-12, meeting A. R. A. requirements and including J-M exander rings. The hand brakes have the National Malleable Casting Company's mechanism with square brake mast. Galvanized wrought iron pipe is used in the air brake piping.

Trucks

The trucks are of the rigid diamond arch bar type with 5-ft. 4-in. wheel base, having cast iron wheels and A. R. A. standard journal boxes. The bolsters are of cast steel with the center plate cast integral and are fitted with Stucki roller side bearings. The spring plank is pressed steel of channel section. Ajax No. 2 brake beams are used. They are fitted with third point suspension and have safety supports of the American Car & Foundry Company's design.

These cars were shipped on their own wheels, being sent to Key West over the Florida East Coast and transferred to Cuba on the car ferry operated by that road.

POST-WAR FINANCING.—Those railroads who financed long-term bonds after the Civil War, running from 40 to 50 years, received an unfortunate deal. They had to pay high interest rates and their maturity falls in a period of high rates. An example is the Chicago & North Western. It had to pay 7 per cent for new money from the Civil War until after the 1873 panic, although its shares paid dividends. Then it financed at 6 per cent until the early 80's and subsequently got money at 5 per cent and 4 per cent. At the beginning of this century it was able to finance itself at $3\frac{1}{2}$ per cent. The tighter money market of the last decade has necessitated a renewed increase in rate on its own securities, rising from 4 per cent in 1912 to 7 per cent at the present, in other words, back to the Civil War rate.—*The Wall Street Journal Straws.*

The Sad Romance of the Detroit, Toledo & Ironton

A Brief History of the Road and an Analysis of the Steps the Fords Will Have to Take to Rehabilitate It

By F. J. Lisman

F. J. Lisman & Co., New York

IN THESE BUSY DAYS even the acquisition of a 500-mile railroad by as conspicuous a personality as Henry Ford does not attract as much attention as it would have 10 or 20 years ago; but the event is certainly both an interesting and important one in the railroad field, both on account of

as crooked as possible. At about that time the Springfield, Jackson & Pomeroy was conceived to run from Springfield (then one of the most important industrial centers of Ohio) southeasterly into the coal fields. There was considerable timber in those days in the southern part of Ohio; and as the constructors of the road were subsidy hunters, they hearkened to the voice of a lumberman who had some good hard wood timber on top of a ridge in the southern part of Ross County and who offered to supply a large number of ties to the road providing the line was built over his particular hill.

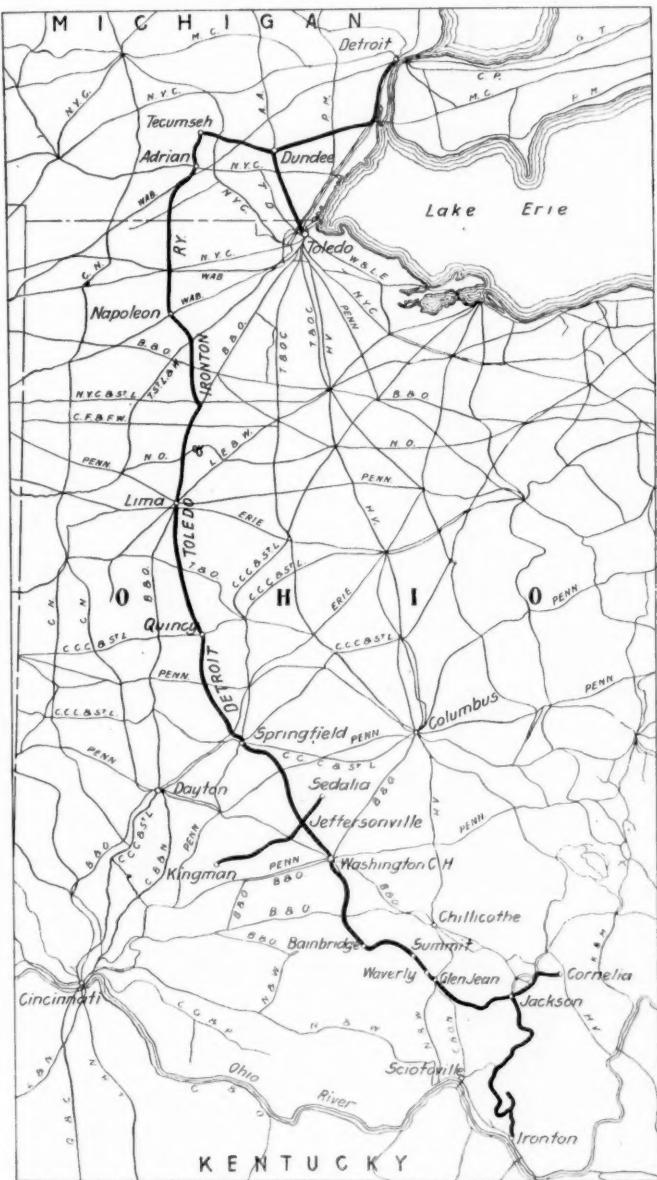
This was done; and while the ties for possibly 15 miles were originally supplied gratis, the road has more than paid for these ties in the way of additional fuel and wages during each and every year of its existence. The Springfield, Jackson & Pomeroy never got beyond the Jackson coal fields and promptly went into receivership before it was fully completed.

The Ohio Southern

It was subsequently made standard gage and then became part of the Corbin system; that is, it was operated in connection with what is now the Peoria & Eastern and which was then known as the Indianapolis, Bloomington & Western, extending from Columbus, Ohio, to Peoria, Ill. This system also went into receivership and the road from Springfield to Jackson then became the Ohio Southern Railroad, which, in the later 80's, authorized an issue of \$15,000 per mile of first mortgage 6 per cent bonds. The road extending from Springfield to Wellston was fairly prosperous, but the fact that it had this open mortgage, authorized at \$15,000 per mile, attracted Henry S. Ives, generally known as "Napoleon Ives, a railroad buccaneer," who, in the early 90's, acquired control of this property and proceeded to extend the road wherever he could build cheaply and as long as he could sell bonds and make a profit out of issuing them at \$15,000 per mile.

Around Jeffersonville, in Fayette County, the country is absolutely level and he proceeded to build branches from this town northeasterly towards Columbus and southwesterly towards Cincinnati, building as far as the country was level. He gave the euphonious title of "Columbus & Cincinnati Division" to these two branches, aggregating 42 miles. He also extended the road from Springfield to Lima, expecting to exchange a substantial coal traffic at that point with the Erie and Nickel Plate Railroads. However, the panic of 1893 brought about the downfall of this scheme and a long and picturesque receivership followed. The receivership was in the Ohio state court and the receivers were local politicians. The management of the property was a stench in the nostrils of the public. For instance, an investigation developed the fact that while the coal shippers as a rule could not get adequate equipment to move their coal, a friend of one of the receivers, who claimed that his mine was producing coal of an inferior quality and therefore had to have a specially low freight rate, in order to enable him to operate at all, got all the cars he needed, while those who were paying higher rates had to do largely without them.

Finally the first mortgage bondholders' committee foreclosed on the property and instead of organizing a new com-



The Detroit, Toledo & Ironton and Its Connections

the interesting and checkered career of this railroad and the novelty of the property's present status.

Back in the early 70's, when some genius discovered the fact that narrow gage railroads could be built cheaper than standard gage roads, it became the fashion to build railroads

pany, as is customary, they proceeded to operate the road as a committee.

The Detroit & Lima Northern

In the meanwhile—that is, about 1896—some Ohio politicians, friends of the receivers of the Ohio Southern, headed by Chas. M. Haskell, who many years afterward became governor of Oklahoma, started to build a railroad from Lima northerly into Michigan, called the "Lima Northern," the title of which was subsequently changed, with the expanding ambitions of the promoters, to the "Detroit & Lima Northern." They also wanted to build a branch to Columbus and showed the pictures of handsome through trains which were to be operated between Columbus and Detroit.

They sold their first mortgage bonds at any old price to whoever would buy them, but within a few months the contractors claimed that they had not been paid anything on account of construction. The road went into the hands of receivers and, under the Ohio laws, the contractors maintained a first lien on all the property ahead of all the first mortgage bonds. The theory of the Detroit & Lima Northern promoters was that, by reaching Detroit from the south without passing through the Toledo gateway, they could handle business to that city to the best advantage and could get the benefit of the 70 cents per ton higher freight rate on coal, etc., which was the differential prevailing at that time to Detroit as against Toledo.

However, the road really did not get to Detroit at all, but to the outskirts of that city (partially over leased lines), it did not reach a single industry in Detroit and, as the Michigan Central exacted a switching charge of \$7.00 per car, the road, of course, did no Detroit business and could not have made any money out of it if it had gotten it and, furthermore, its road was not in physical condition to handle any volume of business.

The Detroit Southern

In 1901, the Ohio Southern and the Detroit & Lima Northern were taken out of receivers' hands under a reorganization plan which greatly reduced the interest charges and which converted the old Detroit & Lima Northern bonds into stock, etc. The management of this new company, called "Detroit Southern Railroad," under the presidency of Samuel Hunt, a well-known railroad man at that time, made a serious attempt to create a good property. Terminals were acquired on the Detroit River, arrangements were made to enter the city of Detroit, the old Ironton Railroad at Ironton was acquired and a short link was built at the south end giving the road connection with the Chesapeake & Ohio and making a through line from Detroit to the Ohio river and the West Virginia coal fields. However, this management could not overcome the handicaps of the property, as it could not raise sufficient additional capital to do all the needful, and another receivership in 1905 was the sequence.

Detroit, Toledo & Ironton

Control of the property was then acquired by H. B. Hollins & Co., and the late Eugene Zimmerman of Cincinnati, Hamilton & Dayton notoriety was made president of the company. The financial reorganization of the company was not a sound one, as the fixed charges had been increased rather than decreased and practically no new money had been provided for necessary improvements; in fact, immediately afterwards the company increased its fixed charges still further in order to acquire control of the Ann Arbor Railroad by the creation of a three-year note issue. When these notes came due, they could not be paid and another five-year receivership was the result.

Finally, in 1914, another foreclosure took place and the old first mortgage bondholders were asked to pay an assess-

ment of \$350 per bond, for which they received income bonds at 60 per cent of their par value and they received in exchange for their old first mortgage bonds about \$500 in preferred stock and \$500 in common stock. Any holder of the \$8,500,000 first mortgage bonds not paying this assessment was wiped out and the holders of the \$4,250,000 of the consolidated bonds were entirely wiped out.

During the last five years, the property has had earnest attention. The management has strengthened its hold on the Detroit situation but the times were very adverse to any substantial development of any railroad. In the meanwhile, the income bonds, for which the old first mortgage bondholders had paid 60 per cent in the hope of thereby making their original investment good, had sold down as low as 7, or about one-ninth of their cost.

The Climax

Now along comes Henry Ford, who buys the property for just about the amount which the first mortgage bondholders paid in assessment in 1914; that is, he has paid exactly 60 for the income bonds, on which the bondholders have had no interest for six years, and he paid \$5.00 for the preferred stock and \$1.00 per share for the common stock, which works out an average of about \$30.00, or 3 per cent for the original first mortgage bonds.

What is Mr. Ford going to do with this property? Geographically, it is ideally located as a through line from Detroit to the south. It crosses every trunk line running from Chicago and St. Louis to the east; it connects at its south end with the Chesapeake & Ohio, practically at the mouth of the Big Sandy river, and through the Big Sandy division of the Chesapeake & Ohio with the Carolina, Clinchfield & Ohio, thus making a straight route from Detroit to the southeast.

The southern end of the line runs through coal territory and connects with the West Virginia and eastern Kentucky coal fields. The line crosses the Baltimore & Ohio at Napoleon, Ohio, and also connects at Lima with the Erie, Nickel Plate and the Pennsylvania Railroad's main line. Mr. Ford, no doubt, expects to get better facilities for transporting to his plant the products of the Pittsburgh district than at present via the congested gateway at Toledo.

He undoubtedly controls enough business to keep the road busy hauling coal and other supplies northbound and hauling the products of his factory as southbound tonnage. However, pretty as it looks there are several flies in the ointment.

\$8,000,000 Must Be Spent

Before this railroad can handle this tonnage, large sums must be spent. The present line, through the city of Adrian, Mich., located about 63 miles southwest of Detroit, must be either re-built or more likely abandoned. The line around that city is crooked and hilly and cannot handle any substantial tonnage. It was built by the above-mentioned promoters as cheaply as possible and in its construction, whenever an expensive barn was in the way, a heavy curve was used in preference.

There is an old right of way of an abandoned railroad which was purchased by the Lake Shore, extending from Dundee, Mich., southwesterly through Lenawee County, and can probably be purchased cheaply, which, together with what is known as the Fayette Branch of the Lake Shore, could be advantageously substituted for the present roundabout Adrian line. Some of the bridges will have to be strengthened, but, above all, the hill in southern Ohio, referred to in the beginning of this article, will have to be eliminated. This is a ten-mile uncompensated 90 ft. grade, with 12 degree curves.

In order to avoid it, it will be necessary to build another railroad, probably 30 miles long, either a considerable dis-

tance to the north or to the south of the present line. Possibly arrangements might be made to use the double track Norfolk & Western line from Waverly in the Scioto Valley to Chillicothe and thence that part of the Cincinnati, Hamilton & Dayton (now part of the Baltimore & Ohio) which is not a particularly busy track between Chillicothe and Washington Court House. This would mean a trackage over other lines of approximately 50 miles.

The necessary shop facilities for the railroad would have to be substantially created anew and a large amount of ballasting and heavier rails is necessary. At present prices, it probably will be necessary to spend on the road, including the elimination of the Bainbridge Hill and the Adrian situation, not less than \$8,000,000. To this must be added the cost of shops, equipment, additional sidings, water tanks, etc. When all this is done, and with good management, Mr. Ford and the citizens of Detroit will have a railroad which will offer great facilities for their business and should, with good management, produce a fair rate of interest on its entire cost.

Fords Paid \$5,000,000

The present physical value of the property is probably somewhere between \$16,000,000 and \$20,000,000. Mr. Ford has paid \$5,000,000 for this, subject to \$1,800,000 of first mortgage and car trust bonds.

Mr. Ford is reported to have always been a keen critic of railway management. It will be very interesting to know whom he is going to select to work out this proposition and how he will take the innumerable problems and annoyances which, during the next few years, will come up in connection with what the railroadmen will, no doubt, call Mr. Ford's "new tin lizzy."

Mr. Ford, it is stated, is going to equip the road with new Ford passenger motor cars. The Detroit, Toledo & Ironton has been particularly weak on passenger business because it runs across at right angles to the direction of passenger traffic, which, of course, goes to the big cities; that is, in the southern part of Ohio to Cincinnati and Columbus and in northern Ohio to Toledo. From Detroit southwesterly, the road competes with the Wabash, which gives much more frequent train service. The only city to which it would naturally have a large passenger business is Springfield and there it competes with a parallel trolley line.

Other Problems

The road has other problems of its own; such as, bad water (on a large part of the line) which requires treatment for locomotive use. It always lacked proper police protection in the city of Springfield, where it used to be the habit of a considerable proportion of the population to jump on the coal cars and help themselves to as much coal as they thought they needed. The Jackson coal field also has some particular troubles of its own. In fact from the railroad point of view, it is the most unsatisfactory coal field in the country. The Jackson coal field produces a very high grade of coal, suitable for domestic purposes only, which brings a particularly high price. This coal has a market during the fall and winter months, in northern Ohio, Indiana and Michigan and very little of it moves at other times of the year.

This field is composed of a number of small mines and three railroads compete for the business. Consequently the cost of marshaling a train out of this district is expensive and, if a trainload is assembled, it is hauled north over the hills until the road reaches the level country near Lima, and then the cars are delivered in scattered lots to all the connecting lines. This coal commences to move heavily in September just as the demand for cars usually grows and the cars become scattered all over the country and do not return to the originating railroad maybe until spring, when the season's business is over.

In the meanwhile the coal operators shout for cars and about every other year they appeal to the Ohio Public Service Commission and ask that the Detroit, Toledo & Ironton show cause why its charter should not be repealed because it is not furnishing the shippers with an adequate and reasonable amount of equipment.

Taking it all in all, if Mr. Ford, himself, wants to learn something about railroads, or if he wants his son to learn the business, he could not possibly have done better than to buy the Detroit, Toledo & Iron Railroad.

Part of the official announcement in connection with the property by Mr. Ford reads:

"For the immediate future a program of large purchases of heavy rails, ballasting, construction of cut-offs and elimination of grades has been adopted and will be put into effect at once, and the capital thus provided by the automobile industry for the development of this Detroit road will enormously relieve the serious rail congestion which has existed in Detroit for some years past.

"It is also stated that all the employees of the Detroit, Toledo & Ironton will share in the Ford bonus distributions."

Early Rate Decision Expected

WASHINGTON, D. C.

AN EARLY DECISION by the Interstate Commerce Commission advancing both freight and passenger rates is looked for now that the Railroad Labor Board has announced its award of increased wages for the employees. Under the law the board is required to certify its award to the commission, which must take it into consideration in fixing the rate level and it has been the general belief that the commissioners had generally made up their minds as to the amount needed by the railroads without the wage increase and that they would be able to add \$600,000,-000 to whatever figures they had previously determined upon in time to announce a rate decision by about August 1 or in time to give 30 days' notice and allow the roads to prepare tariffs effective on September 1.

The wage award would increase the total railroad payroll from \$2,700,000,000, the amount of the wages in 1919, to \$3,300,000,000. An addition of \$600,000,000 a year would require an increase of about 16 or 17 per cent in freight rates, based on last year's freight revenue of \$3,653,-000,000, on top of the \$1,018,000,000, or 28 per cent increase already asked by the railroads, if it were all to be paid by the freight traffic. However, the roads had announced that they proposed to take care of part of the wage increase by advancing passenger fares and assuming that half of the \$600,000,000 could be raised in that way an additional increase of only about 8 per cent would have to be made in freight rates, over the 28 per cent already asked.

Adding the \$600,000,000 to the amount already estimated by the roads as needed to produce a 6 per cent return would make a total of over \$1,600,000,000, or about 30 per cent of last year's total operating revenues.

While the application of the roads averaged 27.85 per cent for the United States, it figured out 30.43 for the eastern district, 30.95 for the southern and 23.95 for the western. Adding 8 per cent to these would make the new percentages about 38, 39 and 32, or 36 per cent for the roads as a whole, although the \$600,000,000 wage advance probably would not produce equal percentages in the three districts. Committees of passenger traffic officers have been working out the proposed increase in passenger fares and representatives of the general rate committee of the Association of Railway Executives, C. T. Airey, vice-president of the Central of Georgia; Gerrit Fort, vice-president of the Boston & Maine, and Edward Chambers, vice-president of the Atch-

son, Topeka & Santa Fe, met at Washington on Tuesday to give further consideration of the matter after the wage decision was announced, for a report to the general rate committee.

Committees of traffic officers, accountants and lawyers met at the office of the Bureau of Railway Economics in Washington on Wednesday to prepare the details of the plan which was to be submitted to the Interstate Commerce Commission on the following day, the general purpose being to raise approximately half of the wage increase from the rates for passenger train service. It was estimated that approximately \$200,000,000 could be raised by an advance of $\frac{1}{2}$ cent per mile in passenger fares and consideration was also given to percentage increases on commutation fares and milk rates as well as to the possibility of $\frac{1}{2}$ cent a mile surcharge for Pullman fares. In addition, the roads expect to receive increased revenue from their proportion of the proposed increases in express rates.

Incidentally, as the wage award is retroactive to May 1, approximately one-third of the annual increase, or \$200,000,000 will be paid out of the United States Treasury for the months of May, June, July and August, under its guaranty to the roads for the period from March 1 to August 31, although some of the roads did not accept the guaranty and are not thus protected.

Copper in Steel Tie Plates Reduces Corrosion

THE NEW YORK CENTRAL LINES have conducted a series of tests under the direction of J. V. Neubert, engineer maintenance of way, Eastern Lines, to determine the relative loss of metal in tie plates of various compositions, including those containing a small percentage of copper. The length of time over which the tests were conducted varied from two years to a maximum of six years, and some of the tests are still in progress. In all cases the maximum corrosion developed on the bottom or under side of the plates, a result contrary to the generally accepted theory of most engineers and maintenance of way men that the maximum corrosion takes place on the top or exposed portion.

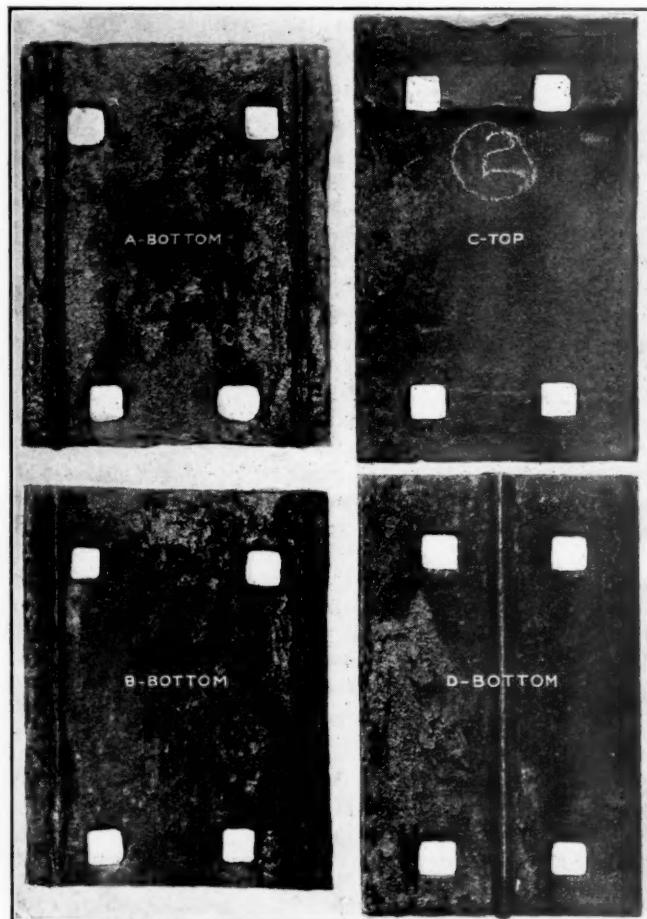
The percentage of copper in the plates containing that metal ranged between 0.25 per cent as a minimum and 0.5 per cent as a maximum, the plates so treated being rolled otherwise according to the standards of the New York Central. The copper-treated plates so obtained were subjected to the same tests as the other plates. An exposed test on a number of steel tie plates rolled from mild Bessemer steel containing 0.25 per cent copper and a number rolled according to the same specifications without the copper content showed an average loss of 8.88 per cent for untreated plates and only 1.46 per cent for the treated plates.

A second exposed test was made which covered a larger number of tie plates rolled from metals of various compositions. The plates used in this instance were cleaned and then exposed on the roof of a building at Hoboken, N. J., where the action of the salt air of New York bay could be studied. Investigation showed that the loss on the copper plates varied from 0.46 to 0.72 per cent, with an average of 0.56 per cent.

In comparing the data so obtained the nearest approach to the results reported from the copper-treated plates was a percentage loss of 0.59 per cent for high carbon open-hearth steel, too hard to punch. The pure iron plate came next, with 1.17 per cent, and then the high-carbon Bessemer plate, with 1.77 per cent, the latter also being too hard to punch. The remainder, which were standard steel tie plates, varied from 4.70 per cent to 6.60 per cent, showing approximately eight to ten times the loss in the common or regularly accepted tie plates as for the special copper-treated ones.

The results of comparative tests of corrosion on copper-treated and untreated plates taken from actual service are more clearly shown in the illustrations. These plates are typical of the ones subjected to the service tests covering periods of time up to six years. Photographs A and B show a standard 7-in. by 9-in. by $\frac{1}{2}$ -in. shoulder tie plate of the New York Central, with $\frac{1}{2}$ -in. bottom flanges. This plate was rolled in 1913 from mild Bessemer steel according to the specifications of that road and contained from 0.10 to 0.15 per cent carbon, from 0.50 to 0.60 per cent manganese, and a combined sulphur and phosphorus content of less than 0.10 per cent. It was installed in track during June, 1913, and removed in December, 1919. The bottom flanges of the plate shown in the illustration and of other samples taken at the same time are practically eaten off.

In direct contrast to this are the results derived from a copper treated plate. Photographs C and D show one of



A and B, Rolled Steel and C and D, Copper Steel Tie Plates After 7 Years of Service

the samples taken from a total rolling of 865 tons, or 22,365 tie plates, delivered to the New York Central in 1913. This followed the mild Bessemer steel specifications of that road, the manganese content being about 0.10 per cent higher, with the addition of 0.50 per cent of copper. The particular plate shown was installed in August, 1913, and removed in October, 1919. Both the top and bottom of this treated plate, as well as the bottom flange, show little or no corrosion.

This addition of copper naturally results in a tie plate with a slightly higher first cost, but the increase over regular prices will not be over \$2 to \$3 a ton, depending upon the size of the order and other relative conditions. As a result of these experiments the New York Central has placed an order for 650,000 tie plates, or 4,000 tons, to be rolled according to the railway's standard specifications, with the addition of 0.25 per cent of copper.

Signal Engineers' 25th Annual Convention

Largest Meeting in the Signal Association's Quarter Century— Extensive Revision of Specifications for Construction

THE ANNUAL MEETING of the Signal Division of the American Railroad Association—the signal engineers and their assistants, formerly the Railway Signal Association—was held at Alexandria Bay, Thousand Islands, N. Y., on July 14, 15 and 16, President C. J. Kelloway (A. C. L.) in the chair. The action of the meeting in connection with pending proposals relative to the terms of affiliation of the signal engineers' organization with the American Railroad Association, and an abstract of the annual address of President Kelloway, were given in the *Railway Age* of July 16, page 118. Secretary H. S. Balliet (N. Y. C.) read the report of the Committee of Direction, telling briefly of what has been done by the Committee during the past 10 months. A sectional committee has been established at Butte, Mont., and there are now 32 such committees. Over 300 members have been admitted during the year and the membership of the division now is 1,508. Mr. Balliet's report included a list of the members of the association who have been in military or naval service with information as to those who have resumed their active membership.

The first discussion was on the report of Committee No. 11, R. B. Elsworth (N. Y. C.) chairman. This committee presented a revised specification for caustic soda primary battery and for leadtype portable storage battery, the design of the revision being to raise the standard requirements; also a revised specification for a concrete storage battery box; also a drawing of round and rectangular primary battery jars and covers. Following a brief discussion all these were accepted for submission to letter ballot, for inclusion in the Manual.

Committee No. 10, W. J. Eck (Southern), chairman, presented a report on colors for signals, which was accepted as information. This report deals with marker lamps and flags used on trains and with various other signals, the purpose being to prescribe standard colors for all uses which shall be consistent with the use of green for proceed and yellow for caution, as in fixed signals. Changes in the wording of numerous rules of the standard code are proposed, particularly where the rules, as they now stand, leave it optional with each railroad what color to use. As to rule 20, however, that which calls for the use of green flags and lights on the front of locomotives, the committee has nothing to say.

This committee was instructed to report on automatic train control, and in response presented a statement, in parallel columns, of the definitions, requisites, etc., of an automatic train control system as proposed by the Block Signal and Train Control Board of the Interstate Commerce Commission, in 1910; the Railway Signal Association in the same year; the American Railway Association in 1914 and the Automatic Train Control Committee of the United States Railroad Administration in 1919. This matter was accepted as information.

The committee reported also on the proper means to be used to cause automatic signals to indicate stop in emergencies, formulating instructions as follows: to protect track workers or when track is dangerous, disconnect the signal circuits; this should be done by the men of the signal department. For a permanent arrangement, open the track relay through a knife switch; open circuit wires through circuit controllers; shunt the track circuit by circuit controller or by knife switch. Indicators may be used to advise track workers of the approach of trains. In emergency a shunt wire

with clips may be attached to bond wires, provided prompt action is taken thereafter to arrange for proper disconnection as prescribed. The meeting voted to submit these rules to letter ballot.

On the subject of time releases, the committee presented the following rule: "For average conditions the proper time interval for the release of the electrical and mechanical devices applied to signal and switch apparatus, should be the time required for a train running thirty miles an hour to travel from a point 1,000 ft. before reaching a distant signal to a point 10 ft. beyond the home signal." The committee presented this only as a guide, adding the admonition that local conditions must govern the actual length of the time interval. This rule was accepted for submission to letter ballot.

Committee No. 6, F. P. Patenall (B. & O.), chairman, submitted for adoption four new standard designs, seven revised drawings and 15 drawings of new subjects, which drawings had been approved at intermediate meetings. The four new drawings were: 1373, gage plates, insulated butt joint; 1414, roundels; 1428, bonding of an electric railroad crossing with a steam railroad where one rail of the electric line is insulated from the crossing; and 1429, same as 1428, with the exception that the electric rails are not insulated.

The other drawings were: 101, switch point drilling; 1010, crank and jaw pins; 1015, one inch signal pipe and coupling; 1082, semaphore bearings; 1084, pipe carrier, assembly; 1085, pipe carrier, details; 1194, semaphore bearing, details and assembly; 1220, cross-arm bolts; 1399, low target stand; 1409, cotters, 1430, semaphore lamp, two lenses; 1440, switch lamp, spherical type; 1441, switch lamp with base socket (for spherical type); 1442, lens hoods and couplings for switch and semaphore lamps; 1443, oil fount for spherical type lamp; 1449, base for four inch pipe; 1470, train marker lamp; 1480, engine signal lamp; 1496, highway crossing gate and slow track sign lamp hangers; 1497, highway crossing gate lamp fount; 1498, highway crossing gate lamp handle and alinement clamp, and 1499, highway crossing gate lamp. But little discussion occurred and it was voted that the 26 standard drawings be submitted to letter ballot for inclusion in the Manual.

Committee No. 12, R. C. Johnson (B. R. T.), chairman, submitted a report on the form of contract for block signal and interlocking work which was up for approval. In the absence of Mr. Johnson, H. F. Haag (K. C. S.), in presenting the report, said that since its preparation a serious question had arisen about procuring insurance under certain paragraphs of the contract; and at his request the entire report was accepted as a progress report.

Committee No. 5, G. K. Thomas (A., T. & S. F.), chairman, presented a revised report on printed instructions and examination papers for signal maintainers. There was considerable criticism of parts of this report and the first section "general" was referred back to the Committee for further consideration. The rest was ordered to letter ballot.

Committee No. 8, C. H. Morrison (N. Y., N. H. & H.), chairman, presented comprehensive specifications for an alternating current automatic block signal system including one for an air-cooled reactor, one for a resister, one for a switchboard and one for an indicator or repeater; and a code of instructions for the installation and operation of switchboards. This Committee's work supersedes various

specifications now in the Manual. The whole was adopted for submission to letter ballot for inclusion in the Manual.

Committee No. 16, I. S. Raymer (P. & L. E.), chairman, presented specifications for lubricating oil which were approved for submission to letter ballot.

Committee No. 4, C. F. Stoltz (C. C. C. & St. L.), chairman, reporting on D. C. Automatic Block Signaling, presented a specification for a universal switch circuit controller and one for first range voltage high signal mechanism; and, after brief discussion, both were ordered sent to letter ballot.

Thursday's Session

Committee No. 9, W. H. Elliott (N. Y. C.), chairman, presented a number of reports on wires and cables. A specification for wire joints, illustrated by seven drawings, was accepted, after brief discussion, to be sent to letter ballot for inclusion in the Manual. This specification had been approved at the March meeting. The same action was taken on a specification for copper bond wire. A member suggested that copper bond wire, when packed for shipment, should be completely covered with burlap to lessen the temptation to thieves; but no action was taken on this suggestion.

This Committee having been instructed to revise the specification for rubber covered insulated wire and cables, with a view to raising the standard requirements, presented a carefully prepared report; but the first member to discuss the motion to adopt this report was the leader of a minority of the committee who desired further discussion or postponement. Mr. Elliott responded by saying that the minority had had ten years in which to present its views in concrete form. The committee had allowed all reasonable opportunities for discussion, and all members had been notified of all meetings; but these minority members had not faithfully attended. Votes in committee meetings had been unanimous. A mere proposal to postpone is not a reasonable method of dealing with a carefully prepared report. The main argument of the minority was for the inclusion of impracticable tests. After a long discussion the report was adopted for submission to letter ballot.

Similar action was taken on the specifications, reported by the Committee, for aerial braided cable for 660 volts; for rubber insulated armored submarine cable for 660 volts; for armored submarine cable for 2,200 volts; for lead covered cable for 660 volts; for lead covered cable for 2,200 volts, and for underground braided cable for 660 volts.

Committee No. 7, on Direct Current Relays, E. G. Stradling (C. I. & L.), chairman, presented a specification for tractive armature direct current relays. This brought out a long discussion on the limits of the drop-a-way and the pick-up, objection being raised to having an instrument so delicate that track circuits could not be worked more than 3,500 feet in length. There was also a discussion on whether the top plate of the relay should be metal. Following these and other criticisms there was some sentiment in favor of recommitting the specification because of the generally admitted desirability of further discussion on some features; but on a strong argument, by the committee, that a new specification was needed, the old one being eight years old, even though perfection be still far in the future, the meeting voted to sustain the committee. Following the adoption of two amendments the specification was adopted for letter ballot. One amendment was to the rule for adjustment (page 279) so as to make the maximum working current for four-ohm relays with two fingers (carrying first-range voltage) 0.100 Amp., and for those with three or four fingers 0.120 Amp.. In reply to a criticism the committee held that it would not be impracticable to deliver the amount of current here specified if the rail bonding were good. The other amendment was to the paragraph (page 281) providing for tests; a clause was added to the effect that the

purchaser shall say what and how many tests he desires to have made at the point of production.

Following the disposal of this report, Mr. Fugina (L. & N.), a member of the committee, asked for the sentiment of the meeting regarding the standardization of direct current relays. There is a considerable sentiment unfavorable to the standardization of signal apparatus, but the committee felt that the direct current relay should be standardized so far as reasonably practicable. A number of prominent members supported this view; but representatives of manufacturers opposed it, declaring that future development would be retarded. They, however, were willing to co-operate with the committee in every way possible except to divulge trade secrets. These are their stock in trade. It was finally voted that in view of the discussion the committee of direction shall take such action as it shall deem necessary regarding the instructions to Committee No. 7.

For Committee No. 2, E. J. Relph (N. P.), presented a specification for mechanical interlocking machine style "A" locking. At the request of the Committee this was accepted as a progress report.

Friday

Committee No. 3, F. B. Wiegand (N. Y. C.), chairman, presented specifications for various details of power interlocking, all of which had been discussed at previous meetings. Acting on a suggestion made at the December meeting, the committee proposed an electric lock applicable both to power and mechanical interlocking machines. Following a brief discussion the specifications were adopted for submission to letter ballot.

The committee on electrical testing, P. M. Gault (I. C.), chairman, presented revised instructions for testing for ground resistance and a revised table for standard ranges and scales for testing electrical instruments. These were accepted for submission to letter ballot.

The Committee on Pole Lines, John Leisenring (Illinois Traction), chairman, proposed the inclusion in the Manual of the specification of the American Railroad Association, for wire line crossing railroads, and this was approved. The meeting approved the action of the Committee in supporting the Telegraph & Telephone Division of the A. R. A. in its opposition to certain specifications, covering wire line crossings, being prepared by the Bureau of Standards.

Committee No. 15, on Valuation, J. M. Carley (B. & A.), chairman, presented a report containing information relating to depreciation, based on the principles which were applied in the case of the Texas Midland; and offered recommendations of percentages to be added to cover loss and waste.

Officers Elected

The officers of the Division chosen for the ensuing year are as follows: Chairman, F. W. Pfleging (U. P.); first vice chairman, F. B. Wiegand, (N. Y. C.); second vice chairman, C. A. Christofferson (N. P.); secretary, H. S. Balliet, (Grand Central Terminal, New York City). The following were elected to the Committee of Directors: W. E. Boland (Sou. Pac.); C. R. Hodgdon (Can. Natl. Rys.); C. J. Kelloway (A. C. L.), and J. B. Latimer (C. B. & Q.).

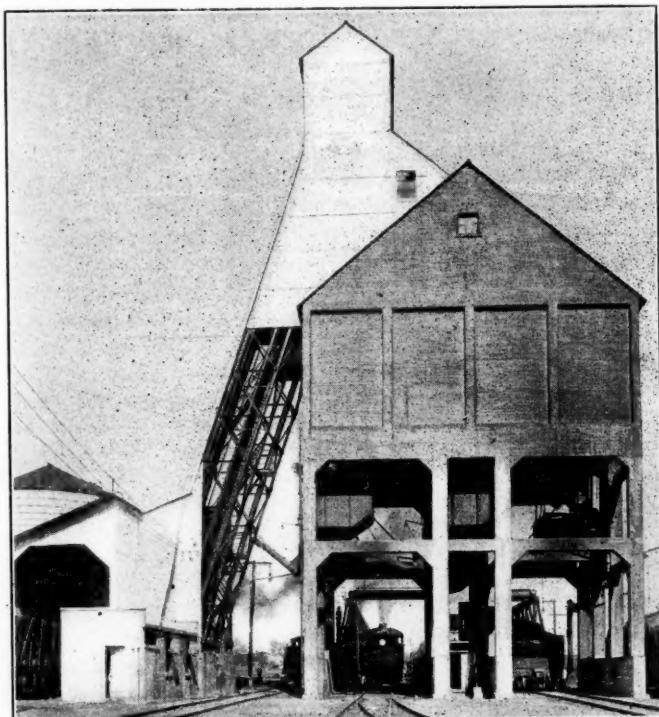
Signal Appliance Association

The officers of the Signal Appliance Association, chosen for the ensuing year at a meeting held at Alexandria Bay, N. Y., are: Chairman, J. Warren Young (Kerite); vice chairman, Henry Lee (Simmons-Boardman Pub. Co.); secretary-treasurer, F. W. Edmunds (Schroeder Headlight & Generator Co.), New York City. Those elected to the Executive Committee are: W. P. Allen (Union Switch & Signal Co.); R. E. Trout (Thos. A. Edison Inc.); L. Thomas (General Railway Signal Co.), and Geo. H. Porter (Western Electric).

A New Coaling Station for the Kentucky & Indiana

THE OGLE CONSTRUCTION COMPANY has recently completed the installation of a reinforced concrete coaling station of the balanced bucket type for the Youngstown yard of the Kentucky & Indiana Terminal at Louisville, Ky. The new station, which has a capacity of 1,000 tons, serves four tracks, and replaces a 500-ton plant which had deteriorated badly. The completion of the new structure has resulted in speeding up engine service at this point, approximately 2,270 engines being despatched during the month of February, 1920, as compared with 1,649 during the corresponding month of 1919, while during March, 1920, this was increased to 2,570 engines.

Coal is delivered to the new station in hopper bottom cars over a hopper track, from which point it is elevated by either or both of two 2½-ton bucket hoists to the top of the storage bin. At this point it is discharged automatically into an inlet chute, where it is deflected by means of deflector gates



End View of Station Showing General Arrangement of Equipment, Etc.

controlled from the ground to any one of the four 250-ton pockets as desired. Each pocket delivers the coal by gravity to a 15-ton steel weighing hopper, the flow of the coal being controlled from the ground. This arrangement provides for the accurate accounting of the amount of coal delivered to the locomotives on any one of the four tracks.

A 100-ton wet sand storage bin has been included in the main assembly, the wet sand being elevated and handled by the same equipment used for the coal. The wet sand is discharged by gravity to a steam sand drier, then flowing over a screen to a dry sand drum. From the drum it is elevated by compressed air to two storage tanks of 5 cu. yd. capacity.

The station proper is entirely of reinforced concrete, while the shed over the hopper track, the roofing and siding of the elevator and the roofing of the power house and coaling station are of corrugated asbestos board. The hoisting machinery consists of two 2½-ton automatic loaders, and two 2½-ton counterweighted buckets each driven

by a 20-hp. electric motor. When operated together these hoists can maintain an hourly hoisting capacity of 150 tons.

The station was erected under the direction of the engineering department of the Kentucky & Indiana Terminal, W. S. Campbell, manager and chief engineer.

Illinois Roads Fight Reduction in Passenger Rates

WITH THE INTERSTATE COMMERCE COMMISSION actively engaged on figuring, not whether it will permit increased freight rates but rather how much this increase should be, the railroads in 10 states are facing a fight to prevent a reduction in passenger fares from 3 cents per mile, authorized by the United States Railroad Administration on June 10, 1918, to the 2-cent per mile rate which Illinois, Ohio, Michigan, Oklahoma, Iowa, Kansas, Indiana, Wisconsin, Minnesota and Nebraska have fixed as the lawful passenger rate per mile. This case has developed further in Illinois than in any other state and as a result railway men throughout the country are closely watching the Illinois hearings which are now being held, as the resulting decision will undoubtedly influence the action taken in other states.

Illinois passed a law in 1907 fixing the passenger rates within its boundaries at 2 cents per mile. Six years later legislation was passed conferring power upon the state public utilities commission to regulate rates, but in this legislation it was specifically declared that it did not repeal the 2-cent fare law. When the government took over the railroads in 1918 the question of increasing passenger fares to 3 cents per mile arose, and on June 10 of that year favorable action was taken on all the railroads in the country. Now that the railroads have been returned to private control, all existing rates under the Transportation Act remain in effect until September 1. The fight which is now developing is to determine whether the state 2-cent a mile laws will automatically become effective on that date or whether the 3-cent a mile fare will be continued.

In many of the states the state utilities commissions have taken the schedules which the railroads have filed "under advisement." However, in Illinois, the State Public Utilities Commission suspended the tariffs which the roads filed. In so doing it declined to permit the 3-cent fare to continue effective after September 1 with a law for 2 cents per mile in the state statutes unless shown the reason.

The roads in Illinois are represented before the commission by Bruce Scott, general solicitor of the Chicago, Burlington & Quincy, whose task is to show why the 3-cent rate should remain effective. Mr. Scott, in representing the carriers, quoted the Transportation Act, which says that the rates in effect "shall continue in force and effect until after changed by state or federal authorities, respectively, or pursuant to authority of law." He contended, furthermore, that the federal government, in taking over the roads, created "a legal status" which continues on rates until September 1 and until thereafter changed. The basis of the railroads' contention is that there must be an affirmative act to change the rates rather than an automatic reversion to the 2-cent fare.

Among the other states which are interested in this case are Arkansas, West Virginia, New Jersey, Pennsylvania, Maryland, Delaware, North Dakota, Virginia, South Dakota and Alabama, all of which immediately before the war had intrastate passenger rates of 2½ cents per mile. In addition, there are a number of states which had mixed rates which are similarly interested in this case, among which are New York, Rhode Island, Massachusetts, New Hampshire and Vermont, all of which had rates running from 2 to 4 cents.

To Speed Up Freight Movement

AT A MEETING of the Association of Railway Executives, held in New York on July 16, resolutions were adopted covering a program to speed up car movement and increase car efficiency. The program calls for an average minimum car movement of 30 miles daily; an average car loading of 30 tons; a reduction of bad order cars to 4 per cent; a similar reduction of the number of locomotives unfit for service; and the adoption of more effective efforts to bring about the return of cars to owning roads.

The meeting also discussed the express situation and decided to recommend that the express business continue to be carried out as at present by the American Railway Express Company. The relations between the railroads and the Pullman Company were touched upon but owing to lack of time decision was deferred.

The resolution outlining the program to be followed was adopted unanimously and is as follows:

Whereas, It is apparent that under existing conditions transportation facilities of the railroads in the United States, with particular reference to the cars and locomotives, are inadequate to handle the unusually large volume of business offered for movement in the country as a whole at the present time; and

Whereas, It will be impossible to overcome immediately this deficiency by increasing the number of cars and locomotives, and it is clear that conditions require the most intensive use of the existing facilities; and

Whereas, It is recognized that upon release of the carriers from Federal control, not only were the cars and locomotives in the country as a whole inadequate and in an impaired condition, but the distribution of cars as to ownership was such as to prevent the greatest efficiency in their use, and that since the termination of Federal control constant interruptions due to disturbed labor conditions, which it is hoped will cease with the announcement of the wage award, have seriously interfered with the movement of the traffic and re-location of cars.

Therefore, Be It Resolved, By this Association, that all members thereof and all other common carriers, be urged to devote forthwith their utmost energy to the more intensive use of the existing equipment, and that, as a program to be followed in this connection, they should undertake, with the co-operation of the public, to secure for the country as a whole

- (1) An average daily minimum movement of freight cars of not less than 30 miles per day;
- (2) An average loading of 30 tons per car.
- (3) Reduction of bad order cars to a maximum of 4 per cent of total owned;
- (4) An early and substantial reduction in the number of locomotives now unfit for service; and
- (5) Should make more effective efforts to bring about the return of cars to the owner roads.

Resolved, That all railroad companies shall forward to the Advisory Committee or such agency as the latter may designate, reports that will enable a check to be kept currently of performance under this resolution, and the Advisory Committee shall arrange for comparative compilation of such reports and make distribution to the individual companies.

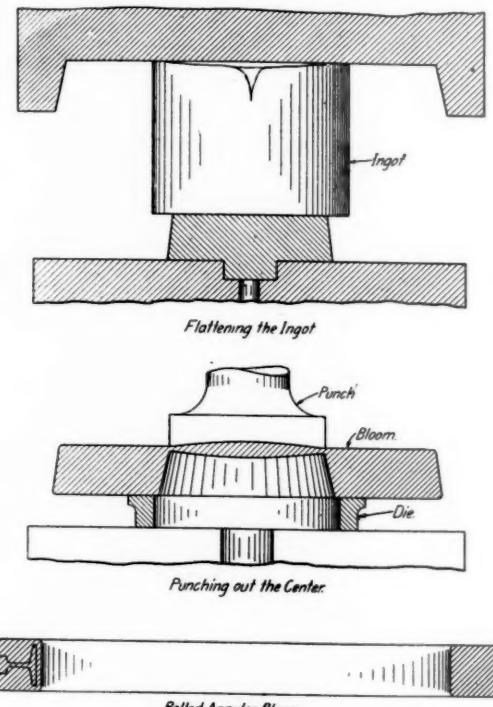
Resolved, That the Advisory Committee be instructed to acquaint the Interstate Commerce Commission with this action.

The decision concerning the American Railway Express Company followed a study of the situation made by a standing committee of which W. B. Storey, president of the Atchison, Topeka & Santa Fe, is chairman. Concerning the decision to recommend the continuance of the present method of operation by the American Railway Express Company, a statement issued after the meeting said: "It is the general belief of the members of the association that this will be in the public interest. As a practical question, there was really

no other alternative because of conditions brought about by the war. Inasmuch as certain questions of revenues of the railroads are involved in this contract, the general counsel of the association, Alfred P. Thom, was directed to submit to the Interstate Commerce Commission the form of contract for its approval. Upon such approval the association will recommend to the member roads a standard form of contract to be made between the individual companies and the express company."

Annular Blooms for Rail Manufacture

SOME INTERESTING experimental work has been done on an entirely new method of reducing ingots to rails whereby it is believed that the trouble from piping and segregation may be largely avoided. In a procedure now followed, any defective metal in the center of the ingot below the portion cropped off is drawn out into the rail, spreading it over a large part of the length. The plan now suggested, which was described by C. A. Witter in a paper before the recent annual meeting of the American Iron & Steel Institute in New York, purposes to apply the method



Three Stages in the Formation of the Annular Bloom

used in the manufacture of steel tires for the past 10 years. In this process the ingot is pressed flat and the central portion punched out to form a ring-shaped bloom as shown in the two drawings. In this process a considerable portion of the material in the center of the ingot is removed by a cutting punch, thus eliminating unsound segregated steel.

After the bloom has been pressed to the ring-shape, it is placed in rolls similar to those used in the manufacture of tires and rolled until the section has been reduced and the ring considerably enlarged. The ring is then cut through with a swinging hot saw, after which special rolls are used to straighten the ring out into a straight bloom. The remainder of the process follows that of ordinary rail manufacture. Tests of six rails produced by this process give results as to the homogeneity of the material in the various portions of the rail section that would seem to justify more extended experimentation with this process.

Claims Against the Railroad Administration

WASHINGTON, D. C.

TWENTY-TWO RAILROADS and transportation companies have now filed their complete claims with the Railroad Administration for a final settlement of the accounts due them or owed by them to the government arising from the period of federal control. One settlement has been made, with the Spokane, Portland & Seattle, and several more with smaller companies are understood to be about ready to be made, but many of the larger systems have stated that they will not be able to compile all of the statistics on which their claims are based for several months. Some considerable sums due the railroads for rental, as to which there is practically no dispute, are thus tied up because the Railroad Administration is declining to pay the entire amounts until the final settlement in order that it may hold enough to protect its own claims. Most of the companies that have filed their complete statements are the smaller companies, although they include the Seaboard Air Line, Western Pacific, and Virginian, the Pullman Company and the Clyde & Mallory Steamship lines. Many other companies have filed claims for certain items.

All claims include items for money due on a regular statement of account, including that due for rental, and in the case of roads that have not signed contracts they usually include a claim for special compensation in addition to the standard return. They also include amounts due on open account in favor either of the company or of the government, and cash taken over or sums collected for one side or the other, with interest.

Most roads owe the government for additions and betterments made during federal control.

On the other hand, the government owes money to most roads, with no dispute except possibly as to the amount, for depreciation reserve on equipment. Frequently there is a claim against the government for equipment destroyed but not replaced and most companies have claims for structures destroyed by fire or extraordinary losses, which the government has to pay because it carried its own insurance. There are also claims on behalf of most roads for losses in connection with additions and betterments made for war purposes, such as tracks to cantonments, or facilities for joint use as a part of the unification program which the individual roads now say they have no use for. Approximately 9,000 of such claims have already been filed. Where the government finds that it is clearly liable the tracks are promptly torn up and the materials sold for salvage, frequently to the company that made the claim, for its use elsewhere.

The largest items in the claims of the railroads are for undermaintenance of way and structures and equipment and for materials and supplies, and there are counter-claims by the government on the same accounts.

About 30 roads have now filed claims for undermaintenance. A few have stated that they have no claims of this character and in some instances companies have admitted they owe the government comparatively small sums on this account.

One of the interesting claims is that of the Western Pacific for \$361,755 damage done by creeping rails caused by using its track between Wells, Nev., and Winnemucca in one direction only, the Southern Pacific's line having been used for traffic in the other direction.

Probably the source of the greatest contention between the roads and the government is found in the question of upkeep. In general the railroads have based their contention, in preliminary discussion with the Railroad Administration officials, on the so-called engineering method of calculating the degree of maintenance during federal control

as compared with the test period. This depends on the number, quantity and quality of physical units of materials used, as distinguished from the so-called accounting method, relied on by the Railroad Administration, which is based on the money expended and the man-hours of labor employed in maintenance, equated for differences in prices and wages between the test period and the period of federal control. The standard contracts between the companies and the government provided that the property should be returned in substantially as good condition as when taken over with a proviso that the expenditure of the same amount of money as in the test period, after making proper allowance for differences in prices, wages, volume of traffic, etc., should be taken as a compliance with that covenant.

While the government is basing its position as to maintenance on the amount of money expended, and certain equation formulas it has worked out, the railroads contend that this method contains no provision for the inefficiency of labor as a result of which the expenditure of given sums produced less physical results. The Railroad Administration frankly admits that this is so, but takes the position that the contracts do not assume to protect the companies against the inefficiency of labor and that morally the government should not be expected to do so in view of the fact that it represents a world-wide condition resulting from the war. The government officers say they will not recede from this position unless and until they are forced to do so by a Supreme Court decision. As it is extremely difficult to prove the condition of a railroad as of either date, December 26, 1917, or February 29, 1920, it would seem that the government has an advantage in the method which it is depending upon, and the lesser railroads are said to be coming more and more to concede the correctness of the accounting method. Some of the larger systems, however, are compiling elaborate records to show a deficiency in physical units of maintenance.

The government is also depending largely on the amounts expended for maintenance of equipment to offset some undermaintenance of way and structures. On this account it has large sums to its credit for expenditures to comply with the requirements of the safety appliance laws. It also made large expenditures for electric locomotive headlights, although these represent additions and betterments rather than maintenance.

The adjustment of materials and supplies is a complicated process, requiring an inventory and a check of thousands of items on each road so that the adjustment may be made on the basis of the prices as of February 29. In some cases a road had more materials and supplies on hand when returned than when taken over, or than it desires to carry, although in general the government will have to pay large sums when it has to pay for the replacement of materials used up because of their greater value at the present time.

The claims when received by the Railroad Administration are separated and the various parts assigned to the appropriate department or division of the Railroad Administration where they are checked up before conferences with the representatives of the roads are undertaken. As the settlements are so complicated and involve so many disputed items which would require a vast amount of labor to investigate scientifically the director general is favoring the plan of lump sum settlements on a compromise basis. This was the method followed in the Spokane, Portland & Seattle case, in which the road received \$1,600,000, after only three days had been spent in negotiation after the claims of the two sides had been set up. While it was at first reported that this settlement included an item for undermaintenance, it is now stated that there were claims on both sides of the maintenance account, the differences between which were largely extinguished in the lump sum settlement, and the Railroad Administration considers it is at least as much en-

titled to say that it collected a sum for overmaintenance as the road is to say it collected for undermaintenance.

It is believed that the compromise basis will be adopted in a large number if not a majority of cases in the interest of expedition, because there is a shortage of competent accountants and many companies will doubtless prefer to make a settlement that will bring prompt returns to protracting the negotiations. The Railroad Administration has not itself filed many claims against the companies, although its organization has done a great deal of preparatory work in that direction, but has rather concentrated on its counter-claims against the companies that have filed their statements, using its own as offsets against those filed by the companies.

The Pullman Company's claim is for \$24,422,264, of which about half represents compensation for the use of its car line property during federal control and the balance represents depreciation of equipment, materials and supplies, and cash taken over.

Securing Uncontaminated Water in Coal Territory

By R. Reimann

Assistant Engineer, Baltimore & Ohio, Baltimore, Md.

WITH THE INCREASING DEVELOPMENT of coal mines, it has become a difficult problem for the railroads traversing coal fields, to secure uncontaminated water. The problem is not only to obtain a water supply that is satisfactory today, but to secure immunity from future contamination by mine drainage.

The Baltimore & Ohio traverses many coal fields and consequently has its full share of this difficult problem. On the Cleveland, Lorain and Wheeling branch, where it traverses the Pittsburgh coal field in an east-west direction, just west of the Ohio river, from a point opposite Wheeling, W. Va., the contamination from mine drainage had become a source of much concern in 1904. The water was taken from Wheeling creek (in Ohio), and had become much polluted, particularly from mines located on Crabapple creek, a tributary to Wheeling creek. A test well was driven to ascertain if water might be had from deep wells, but the result proved to be disappointing. It was therefore decided to locate a dam and reservoir on Wheeling creek above the mouth of Crabapple creek, which at that time was the principal carrier of contamination. It was only a few years before mines were opened above the dam, and trouble developed again, and gradually became worse, as more mines were opened.

New investigations and surveys of the watersheds of several of the tributaries to Wheeling creek were then made. Reports were made by various experts, but were invariably inconclusive; it can be said literally that there was much groping in the dark, evidently because of lack of a comprehensive knowledge of the extent of the coal veins, particularly of course, where they had not yet been developed.

It was then, that the idea of preparing a map of the entire region, showing by contour lines the elevations of the principal coal seam, the Pittsburgh vein, and the line of outcrop was conceived by the writer. There is nothing new about this method of mapping; it has been used for several years by the United States Geological Survey in making its geologic folios, but the practical application to the question of an uncontaminated water supply is new, as far as the writer is aware.

The topographical sheets (to a scale of 1 in. to 1 mile), published by the United States Geological Survey, form the basis of the map. On these are put, after they have been reduced to the sea level datum as many elevations of the coal as can be obtained from the several coal mining companies.

As the contours on top of the coal seam are very much more regular and uniform than the surface contours, relatively few elevations are necessary to determine the contours such as appear necessary and are not obtainable from the coal companies, are obtained along the outcrop by wye-level and hand-level. While the elevations might be obtained by aneroid, if done with great care, this method is not recommended, as such errors as are likely to occur with an aneroid will cause serious misrepresentations. As a rule, the coal beds are so nearly horizontal that errors of 5 or 10 feet in elevation will be quite troublesome. Based on these elevations, the contours are then sketched on the map, and the line of outcrop readily obtained by means of the coal contours and the surface contours. By means of such a map, the liability of pollution for any stream can be determined readily, and the elevation of the coal in relation to the surface obtained.

Unless there should happen to be some watershed entirely outside of the coal field, and consequently immune from contamination, the question will be to select the watershed which appears the most favorable because the coal is relatively the deepest below the surface. The investigation should not stop here; a detail survey of the site should establish beyond a question the entire practicability of the project, including its possible adverse effect upon present and contemplated mine operations, before the decision should be considered final. If such is not the case, it would be advisable to make a detail survey of the watershed that, on the map, appears to be the second choice, and so on.

While the method outlined above will entail considerable expense, it is believed to be indispensable where a water supply has to be obtained in a coal territory. Superficially considered, it might appear that a mere direct investigation in the field would be all that is required, but experience shows that such is not the case. As above stated, the reservoir built in 1905 soon became contaminated. Since that time numerous investigations have been made; if any of the recommendations made had been followed, it would only have been a question of time when the trouble from contamination would have recurred. By preparing such a map as above described, no possible source of future contamination from coal mines can be overlooked.

Reports of Accident Investigations

THE INTERSTATE COMMERCE COMMISSION has issued its "Summary of Accident Reports, No. 2." It is for the months of October, November and December, 1919. This report, like the earlier one, noted in the *Railway Age* of June 18, page 1926, contains only the reports made by the Bureau of Safety, on collisions and derailments which have been investigated. The statistical reports of railroad accidents, compiled by another bureau, appear in another form.

The present bulletin contains reports on seventeen cases, including two on electric roads. The names of the roads, the location, and the dates are as follows:

Northern Pacific, Helena, Mont.	October 1
Buffalo & Lake Erie Traction Co., Dunkirk, N. Y.	October 4
Erie Railroad, Belmont, N. Y.	October 10
Louisville & Nashville, Okema, Ky.	October 22
Louisville & Nashville, East Louisville, Ky.	October 28
Southern Pacific, Vincent, Calif.	October 29
Tennessee Central, Ober City, Tenn.	October 30
Delaware & Hudson Co., Schoharie Junction, N. Y.	November 15
Chicago Great Western, Harlan, Iowa	November 16
Pennsylvania Railroad, Lancaster, Pa.	November 17
Chicago & Erie, Newton, Ind.	December 9
Norfolk & Western, Walton, Va.	December 18
Canadian Pacific, Onawa, Me.	December 20
Chicago, Rock Island & Pacific, Elmont, Kans.	December 20
Detroit United Lines, Frisco, Mich.	December 21
Wabash Railroad, Huntsville, Mo.	December 22
New York Central, Cleveland, Ohio	December 24

The bulletin contains a six-page table showing condensed statements of the causes of all collisions and derailments investigated by the Commission in the year 1919.

The Work of the Russian Railway Service Corps

Two Hundred American Railway Men Render Invaluable Service
on Trans-Siberian Lines

By Paul Wright

IN THOSE MONTHS when the entire world's attention was concentrated upon the momentous events that marked the crisis and culmination of the war against Germany a little group of American railway men was conducting a work of historic value in northern Asia. It is not generally known here that for a considerable time the American Railway engineers, technically the Russian Railway Service corps, were in command over more than 5,000 miles of the Trans-Siberian system. The bigness of this task is difficult to grasp. The roads at one time under American supervision stretched from Vladivostok on the Pacific, across the

Russian—just as operating officers in the states are located.

There were 151 engineers of the Russian Railway Service corps scattered along the Trans-Siberian, not only in the particular danger zone from which Col. Morrow's troops evacuated, but in other danger zones as well, inland as far as 2,700 miles from Vladivostok. As late as March 22 of this year some of them were still there.

In the middle of last January the engineers received orders to move out the Czecho-Slovak army, and they were assured that when this was accomplished they were to be returned to America. At that moment the 151 engineers were positioned along the interminable Czecho-Slovak column of some 200 trains, between Vladivostok and Krasnoyarsk. Seven of these Americans were so far back in the line that the Bolsheviks cut them off and took them prisoner. The conditions under which that winter's work was performed were beyond description. The cold was intense, between 30 and 60 deg. F. below zero. Engines were dilapidated, the coal supply most precarious, workmen were panicky and actually starving and the currency was valueless.



American Railway Officers at Chang-Chun, Manchuria

plains and mountains of Manchuria and Siberia, past the one-time capital of Omsk, over the Ural mountains that divide Asia from Europe, and down into old Russia as far as the outpost cities of Ufa and Perm.

Furthermore, in the 28 or 29 months of their sojourn in this far distant land these Americans came into close touch with the Russians; and upon the railway men rather than upon the American soldiers or the American Red Cross workers will depend the opinion and estimate of the United States that countless Russians will retain for many a decade in the future. This personal contact of Russians and Americans is of importance. The officers of the corps were stationed along the line in Siberia and Manchuria—the territory of the Chinese Eastern in Manchuria is practically



The Harbin Group of American Engineers Outside Their Mess Hall

Then there was the large Kolchak army in rout. Bolshevik raids that burned bridges and stations, typhus fever and unspeakable misery in every village and town along the railway. The strain that the Americans endured was excessive. Their trainmasters, despatchers, road foremen, superintendents were called upon to perform every conceivable operation in connection with train movement, from coal mine operation to the calking of flues. Despite these adversities they maintained an average movement of two Czech trains eastward daily plus fuel, hospital trains for the Kolchak army and military trains to protect the lines. All the beginning of February it looked as if the railway would absolutely cease functioning, but it did not.

The Americans were making substantial progress despite the extreme disorder when the Kolchak government went to pieces. They were functioning in Siberia before any other ally was active there except the Czechs, whom they found there. The Americans helped in the early movements of the Czechs and helped to get them out. Of the 216 original members of the corps all but 42 had gone back home at various times and it was replacement that kept their strength up to the 151 officers on the rolls at my last de-

tained information from Siberia, in March, when they were all preparing to leave.

The despatching of the Russian Railway Service corps from America to Siberia followed the report of the Stevens commission. It was sent there primarily as a part of the war against Germany, in order to re-organize the great Trans-Siberian railway to the end that arms and ammunition could be transported through Siberia into Russia. That was the idea of the Stevens commission report of September, 1917, more than a year before the end of the war. Later it became plain that the engineers were to serve the cause specially by assisting the Czech-Slovak army, which was fighting its way eastward from central Russia toward the Pacific.

The Chronology of the Expedition

The Russian Railway service corps numbered 216 men when it reached Asia in December, 1917. Its rolls bore the names of men capable of doing anything that needs to be done in railroading, from firing an engine or putting a tire on a driving wheel to train despatching and managing a great road. The men were organized like part of the army, they had commissions from the United States government with the rank and pay that go with these commissions. Col. George H. Emerson, of the Great Northern, was in supreme command. Most of the engineers were from Minnesota, Wyoming, Montana and adjacent territory, where the climate was reasonably similar to that of Siberia, which fact would render them capable of dealing with the problems that should confront them in the terrible winters to be encountered.

The engineers reached Vladivostok, the metropolis of Siberia and the terminus of the Trans-Siberian, on December 14, 1917. The Bolsheviks held Vladivostok then and refused to let the Americans land. Their United States transport lingered in Vladivostok harbor for three days and risked being frozen in by so doing. On December 17 the transport turned about and carried the corps back to Nagasaki, Japan. Here the Americans lived for months, learning something of Japan and studying the Russian language. In March, 1918, one half of the party under Col. Emerson came to Harbin, the great railway center of Manchuria, at the strategic point on the Chinese Eastern, which is a component part of the Trans-Siberian system. These men immediately began to do whatever work was possible on the railway, from Manchuria station on the northwest at the border between Manchuria and Siberia, down to Chang-Chun, where the Chinese Eastern touches the Japanese system, the South Manchurian, and likewise down the Chinese Eastern on the main line to Pogranitznaya, where Manchuria and Siberia meet again. They rode trains, traveled in locomotives, superintended repairs in roundhouses and shops and generally made themselves useful.

It was not until August 10, 1918, that the remaining half of the corps left Japan and came to Vladivostok. The political complexion of Siberia had changed since the preceding winter and the Bolsheviks were no longer in control, having been defeated by the Czechs as a result of Gen. Gaida's notable campaign across the country. Thus the entire corps was put in a way to co-operate with the Omsk government, which was believed to be bringing order to the country. The Vladivostok group engaged itself along the Ussuri branch of the Trans-Siberian as far north as Khabarovsk, 500 miles from Vladivostok, where the Amur and Ussuri rivers join. Circumstances, however, did not allow them to participate so actively in the railway management in Siberia as the other group was doing in Manchuria. The Vladivostok group was under Col. F. H. Lantry, of the Great Northern. Its work was largely advisory in the early months after their arrival, with no official authority.

These were days of waiting for the engineers and they

were difficult to endure. The corps had come to Siberia in order to participate in the big war, and they felt that now they were doing nothing. They were not fighting and they were not even rendering to the unfortunate Russians the assistance that they were so well fitted to give. Whatever it was that restrained the engineers was obscure and occult. It had its abiding place in international politics and international jealousies. Certain nations were afraid that the United States would get too firm a grip on the affections of Russia, and very likely some sinister influences hated to see any real succor given to that nation, preferring that Russia be left prostrate.

However, this period of waiting ended at last. Late in January, 1919, the allies got together in some sort of agreement and arranged that the re-organization should be initiated according to the plans of the Stevens commission. In the middle of March the news was spread among the Americans everywhere in Siberia that they were to take hold. Presently the apportioning of the thousands of miles of lines was begun. The men were stationed where they could do the most good, according to their individual capacities. Long sections were given to the military forces of various nations to protect. There were Czech railway guards, Polish, Japanese, Chinese, Canadian, Russian, American and others. The A. E. F. in Siberia were allotted, first, a stretch of a few score miles north of Vladivostock and, second, a longer bit in the vicinity of Verkhne Udinsk, in central Siberia, east of Lake Baikal.

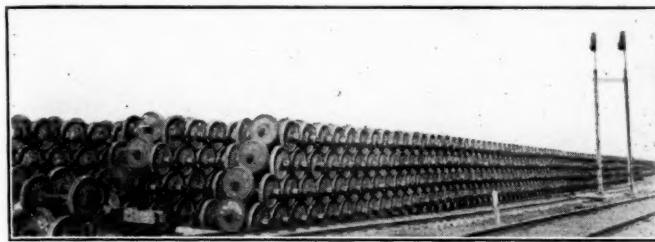
Railway experts of other nationality than American were given a share in the railway work, but by far the greater portion of it was done by our own men. And all, whether British, Canadian or Japanese, reported to the high American officers. John F. Stevens maintained his headquarters in Harbin. Col. George H. Emerson, in immediate command of the enterprise, was also there much of the time. Col. F. H. Lantry was then at Irkutsk and Col. B. O. Johnson (of the Northern Pacific) at Omsk was in charge of all the far western work, including such of the lines as extended over the Urals into European Russia. When Col. Emerson returned to the states Col. Johnson was made the high commanding officer.

These re-organizers co-operated with the white government at Omsk. They went at their duties seriously and impartially, as many an American discovered to his grief, when he was compelled to give up his private car in order that it might be devoted to the good of the country. All hands set themselves to the task of taking account of the rolling stock, estimating the extent of the sickness of the "sick" engines, introducing efficiency methods into the general operation, and the like.

New engines were set up and fresh wheels put under old cars until the Trans-Siberian system looked more American than ever. As a matter of fact a large proportion of the locomotives in use in Siberia were built in the United States and a great part of the freight transported is carried in steel gondolas made in America. The tiny Russian freight cars are infantile in comparison. Out of Vladivostok no less than 54,000 car wheels were stacked up awaiting the time when they should be used in rehabilitating the lines. These wheels had been made in America. Not far away were enough American steel rails to lay down 350 miles of track. A good deal of this material has doubtless been used by this time.

This good work would have brought relief to the Russians if it could have gone on but it was not to be. Events entirely outside the control of the American engineers spoiled the plans. The Bolsheviks, who apparently had been near defeat at Easter, 1919, received fresh energy from somewhere. Bad conditions appeared in Kolchak's armies and the Reds came driving eastward from Russia till they overran Siberia. The Omsk forces were disheartened. When

the tide of battle approached Omsk the Kolchak government had to flee and all the Americans in that part of the world left hurriedly. This meant, among other things, the removal of the vast Red Cross stores at Omsk and the transfer of hundreds of refugee children from western Siberia to Vladivostok. This was the beginning of the end. The Omsk government, for reasons which need not be discussed here, was not equal to the pressure from within and without and



Some of the 54,000 American Car Wheels Stored at Ugolnoya, near Vladivostok

it went to pieces. The task of reorganizing the Trans-Siberian lines therewith became automatically impossible.

Siberian Railway Methods

The Trans-Siberian needs to be seen to be appreciated. It stretches over the most tremendous country in the world and is constructed in fitting style. From Vladivostok to Petrograd is 5,466 miles. Nearly all of this is double track in effect. The parallel lines are not always close to

sheviki were engaged in crippling the road they did no more to the water towers than to puncture the tanks on top. The stately towers buildings remained intact, as the Bolsheviks lacked the explosives to destroy them.

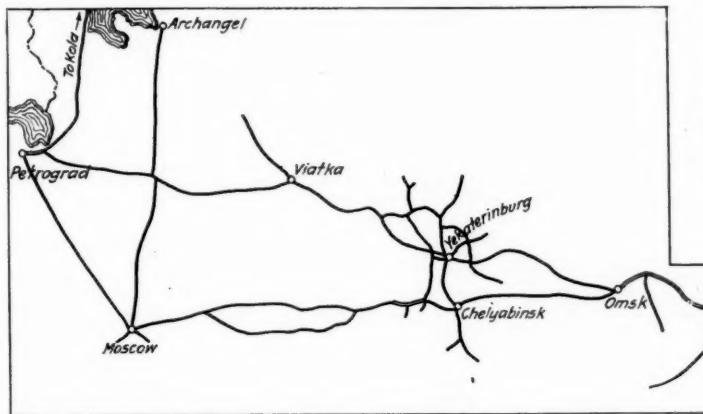
Similarly the damage done by the civil war to the steel bridges was in most cases only temporary. It takes a good deal of dynamite to bring down a steel bridge of solid Russian construction, and a pretty thorough knowledge of engineering and explosives as well. When Col. Emerson saw some of the dynamited structures in the summer of 1918 he remarked that nothing appeared to hold them up but the formulas but within a few weeks trains were running over most of them, although many a steel span was replaced by timber.

At most of the lesser stations the buildings are of logs, but even these are designed with artistic skill. There is nothing slipshod or careless anywhere. In the larger towns the stations are of brick or stone. Each of them has a first class dining room that is well lighted by great lamps and windows and made attractive by the monstrous potted plants that the Russians love and understand. Tea and coffee and cakes can be had at all hours for moderate prices and when the trains pull in the passengers can buy appetizing and generous meals at comparatively little cost.

At all of the terminals and at many of the intermediate points hospitals are established for the railway employees, this in addition to the dispensaries. Our train found these hospitals and dispensaries almost destitute of surgical instruments and sometimes entirely destitute of medicines—no iodine, no ether, no chloroform, no gauze, no bandage. The woman surgeon at the head of one railway hospital—Hilok—said: "We have no medicine but water."

Paternalism extends even to the homes of the railroad workers, for whom the road provides dwellings and fuel. The workers live in "community-planned" villages near the stations. For its railroad men Russia was practicing town planning long before America knew what the term meant. Not a single station is without its pretty little park and generous helping of trees.

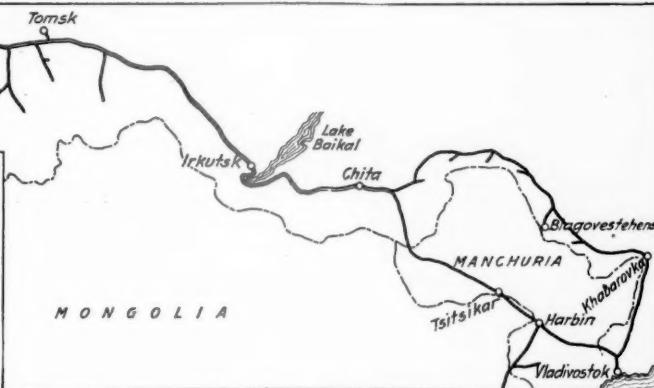
As you travel over the Trans-Siberian you get the im-



The Trans-Siberian Railway

each other, but they are there, at least for traffic purposes. Except for a few short stretches the 2,100 miles from Kirimskaya to Omsk are as nearly double track as any main line in the states. From Omsk westward the road divides, one branch going to Ufa and the other to Ekaterinburg and Perm, but both lead ultimately to the Russian metropolis. At Kirimskaya the two eastern branches come together—the Chinese Eastern, that has led up from Vladivostok by way of Manchuria, and the Amur branch that has been following that river from Khabarovsk, where it joined the Ussuri, to Vladivostok.

All the way along are evidences that the Trans-Siberian is admirably done. The station buildings are a most obvious evidence of thoroughness. Even in the midst of the forest or snow-covered plains these are no rude and temporary shelters, dropped down miscellaneous beside the track. We saw hundreds of station houses in Siberia and not one of them but pleased the eye with its symmetry, convenience and cheerful color. Even the water tanks are far from being ugly in outline. Generally they possess beauty and dignity, as well as strength and endurance. When the Bol-



pression of a gigantic human-power momentum. There is a vast army of trainmen, track men, repair workers and others. In the early winter months of 1919 we saw the tracks kept clear of snow by hordes of patient shoveling, men, women and children. Indeed, a good deal of the crossing guarding and even heavy shoveling in Russia is done by the women. They are sturdy enough to do anything.

The running schedules in this part of the world are slow. For instance, the regular mail train across Manchuria made 33 miles an hour as its best speed. The average speed for the fast trains was also 33 miles an hour. Between Vladivostok and the western extremity of Manchuria, a distance of 1,065 miles, the running time is 40 hours for the best

train. The train stands still 10 hrs. and 30 min. in addition. The Trans-Siberian express, the train de luxe and the glory of the line, also had astonishing long stands.

The long waits at the stations, however, give the travelers a chance to get out and walk, to purchase food, to fill their tea kettles with hot water, and generally to break the monotony of the long journeys. The delays also give the hot boxes a chance to cool. Since the revolution much of the passenger traffic is carried in box cars.

The track is good. The rails weight 72 lb. to the yard. The gage is broad—5 ft. $\frac{1}{2}$ in. The locomotives pull about 60 per cent of their capacity. The engineer starts and stops his train gently. The practice of pulling out couplings is frowned upon. The idea in Russia is to keep the locomotives and cars in good condition.

Overcrowding was always the rule on passenger trains except on the express. Switch engines are limited to three versts an hour in the yards. They merely creep along, and have no bells, because they do not need any. As the switchmen signal by horns and the engineers reply by using the locomotive whistle, a Russian railway yard is a poor place to sleep in.

In November, 1918, there were 150,000 refugees living in box cars in Russia and Siberia and this number must have been increased immensely as the months went by. The Czecho-Slovak army lived in cars, and it was one of the grievances of the Russians that the Czechs were holding so large a share of the rolling stock.

Russia has no train despatching system and this accounts for much of the slowness. The local station master along the line is in absolute control. If there is a train at his station he will not let it advance until he has been told over the wire that the track is clear. Russian trains are run on the staff system as in Germany. The steel staff, maybe two feet long, is the engineer's authority to proceed, and it is released in each station through an electrical device by the station master at the stop ahead. The American engineers were engaged in teaching the Russians the rudiments of American train despatching when the situation became too difficult. The Americans say that the rank and file of the Russian engineers, shopmen and station forces are of high standard and that all they needed was proper instruction in modern methods.

There has been a vast amount of graft in Russian railroading, especially of late. If a merchant wanted a car it facilitated matters to give a thousand rubles to the proper person. The native officers, or at least a large part of them, were not unnaturally opposed to American methods. It meant that very many of them would lose their jobs and would also lose their graft.

With the great mass of the Russian people, with the rank and file of the workers, the Russian Railway Service corps got along very well. Most of our railroad officers are men who have worked up from humble beginnings, and even the technically trained men among the Americans were able to get out and tackle any kind of job with their bare hands. Not so the Russian superintendents, the "nachalniks." The nachalnik is a technically trained man, and between him and the mere workers there is a great gulf fixed that the worker can never hope to pass. The Russian worker under this system can never hope to become a boss. He is out of sympathy with the entire white collar company, and they with him. Time after time our American engineers astonished the men in the workshops by showing them how a job should be done by doing it themselves. Thereby the Americans lost face with the Russian nachalniks, and doubtless made the nachalnik's position more difficult. This part of the caste system and the inability of the worker to rise to better positions accounts for much of the sabotage over there and for the spread of bolshevism.

Commission on Car Service Activities

WASHINGTON, D. C.

WHILE THE ORGANIZATIONS built up by the railroads for the handling of transportation problems which require co-operative action have no direct means of enforcing the control which has been delegated to them, a means for bringing about compliance with the orders of the Commission on Car Service is indicated in a circular which it issued to the railroads on July 19. While no penalty is attached to its orders for the relocation of cars, the circular calls attention to the fact that they are mandatory and suggests that they may be made just as enforceable as the orders issued by the Interstate Commerce Commission, which have legal effect and carry a penalty for violations, by the simple expedient of asking the Interstate Commerce Commission to issue its own service orders against any individual road or roads that fail to carry out the orders of their own organization.

After its organization on March 1 the Commission on Car Service began issuing relocation orders, for the purpose of restoring something like a normal percentage of home cars on home roads. In many cases according to general gossip, the degree of compliance with the orders depended to a considerable extent on whether it was or was not convenient for some roads to carry them out. After the Interstate Commerce Commission had been requested by a number of railroad executives to exercise its emergency powers and had issued its Service Orders Nos. 2 and 3, transferring empty box cars from eastern to western roads and coal cars from western to eastern lines, Commissioner Aitchison found it necessary to telegraph Daniel Willard, as chairman of the executives' Special Committee on Car Service Matters, that in many instances the deliveries ordered had not been made. Mr. Willard at once took the matter up with the executives of the various roads and assured the commission of the full support of the committee in an effort to see that further action on the part of the commission would not be necessary.

The commission, of course, had a method of its own of enforcing its orders if it should deem it necessary, but since the expiration of its first relocation orders they have been renewed with some modifications by the Commission on Car Service, and the railroads, in organizing the Advisory Committee of which Mr. Willard is chairman, have undertaken to create an organization which will make it unnecessary for the Interstate Commerce Commission to issue formal orders where the railroads can handle the situation by themselves. Circular C. C. S.-59 issued by the Commission on Car Service, which indicates the location of the teeth not found in its own orders, is as follows:

"The orders of the Commission on Car Service for the relocation of cars are mandatory and must be complied with, regardless of the effect upon distribution of empty cars for loading on the railroad with which the order is placed. In the event that compliance with any order so placed involves operating difficulty or undue hardship, the facts should be immediately presented to the Commission on Car Service for consideration. Discussion of the merits of an order must not interfere with performance in the meantime.

"The Interstate Commerce Commission, which receives reports daily of the performance of each railroad on the orders of this commission, has ruled that:

1. The rate of delivery required by such orders should be maintained within weekly periods so that at the end of each seven days the full delivery required for that period shall have been made.
2. In the event of failure to maintain current deliveries through unavoidable operating difficulties, the accumulated deficiency must be made up at the rate of not less than 25 per cent of such deficiency each week until the order is up to date.

"The Interstate Commerce Commission requires from us a precise explanation in all cases where deliveries are not made in accordance with the schedule provided in the orders, and has informed us that in all instances where the order is not being given proper consideration by the individual railroad, it will be necessary to issue service orders against the delinquent road."

As the Interstate Commerce Commission's orders are made public this plan will also serve to give publicity to the railroads which are failing to co-operate with other roads and will avoid the danger of creating a public impression that the roads generally are doing so, which is likely to be the case when statements are made that "some roads" are failing to obey orders, or that "in many cases" orders have not been complied with.

More Box Cars Ordered West

The movement of 25,500 additional serviceable empty box cars from eastern and southeastern roads to western lines to assist in handling the new grain crops has been ordered by the Commission on Car Service for the 30-day period beginning July 25. The orders, with some modifications, represent practically a renewal of the orders in effect for the 30-day period ending July 24, which in turn represented a renewal of the directions contained in Service Order No. 3, issued by the Interstate Commerce Commission. The Interstate Commerce Commission's order directed the movement of 19,800 box cars of the western road ownership from eastern lines in specific daily instalments from May 25 to June 24. When it expired the Commission on Car Service issued similar orders for the next 30-day period covering a total movement of 27,900 cars. The new order will move a large number of cars from southeastern to southwestern lines, and also some of the cars from eastern and New England territory will find their way into the Southwest. These orders for the interterritorial movement of box cars are in addition to numerous relocation orders for the movement of cars from one road to another in the same territory to meet important requirements.

Preference for Fertilizer

The Commission on Car Service has issued a circular directing all roads until further notice to furnish preferential orders for the loading of fertilizers to the extent of a minimum of 75 per cent of the actual daily requirements. The circular says this movement is a seasonal one and the movement has already begun, the season having been advanced at its solicitation through the National Fertilizer Association, with a view to helping out on the car supply.

Summary of Car Situation

The Commission on Car Service has issued the following summary of general conditions as of July 15:

Box Cars—There is an especially heavy demand for box cars. Complaint from shippers indicates the shortage is widespread. The distribution of box cars to equalize the shortage is being given close attention. There is a heavy movement of box cars to western roads in preparation for the heavy grain movement now commencing. This will involve further curtailment of box car loading in the East to meet the present emergency. The demands for ventilated box in the southeastern section is especially heavy and the situation justifies constant attention. Outstanding instructions, calling for empty movement of ventilated box cars to vegetable-loading territory, must be rigidly enforced.

Automobile Cars—Prompt movement should be given automobile cars to auto-loading territory. Ownership must be respected in loading such cars, except that cars may be moved loaded or empty to Lower Michigan or Upper Indiana or, Ohio, auto-loading points for loading with autos or trucks in accordance with the Car Service Rules.

Stock Cars—Shortage of stock cars continues in stock-loading territory. The demand for stock cars in the South and Southwest for watermelon and other perishable loading is also extremely heavy, making it imperative that these cars be not delayed. Stock cars should be handled with despatch and in accordance with existing instructions.

Refrigerator Cars—Good movement of empty refrigerators to California continues, which is giving shippers a good supply of cars. Loading continues heavy and necessitates concentration on westbound movement of empty cars. Requirements elsewhere, including cars for packing house and dairy products, continue active and loading is being reasonably well taken care of.

Flat Cars—An extreme shortage of flat cars for loading logs and piling still exists in the southern territory. In the central territory the demand for flat cars for agricultural implement loading continues to exceed the supply.

Open Top Cars—There was a substantial increase in placements for coal loading during the first half of July, attributable to Monday, July 5, being generally observed as a holiday, and the effects of Service Order No. 7. There continues an acute shortage of mill gondolas in the mill districts, and storage space is rapidly becoming exhausted. Efforts should be concentrated on moving this type of car promptly to the owners. Service Order No. 9, issued by the Interstate Commerce Commission on July 13, defines coal cars as any having sides 36 in. or greater in height. This order should further improve the supply of coal cars for coal loading, and relieves the existing shortage at many of the public utilities plants.

Cars Not Equipped with Safety Appliances

In a supplement to Circular CCS-34 the Commission on Car Service says there have been questions raised as to the propriety of ordering cars not equipped with safety appliances moved, loaded or empty to the owner, in order that they may be equipped in full compliance with the law not later than November 1 next.

"The Commission on Car Service does not attempt to assume any special prerogative in this respect. The information given in Circular CCS-34 that extension of time will probably be denied and that penalties accruing because of such movements at the present time may be postponed until November 1, 1920, is entirely correct. The actual necessity exists for getting these cars equipped not later than November 1 or penalties will undoubtedly be applied at that time and will probably be retroactive to March 1, 1920. It is, therefore, of the utmost importance that all possible protection be thrown around these cars that they may be equipped according to the law. It would seem that the quickest and most effective way is to catch the cars where they are and have them equipped without attempting to return them to the home road for this purpose. If, however, it is found essential or desirable for any special reason the movement may be made in accordance with Circular CCS-34 without suffering the penalty until November 1, 1920.

"Lists of cars reported not equipped and not on home roads will be issued shortly, following which it is urged that inasmuch as owners' records with respect to these cars are probably not accurate in some instances that an inventory be made of every car reported on respective railroads to make sure that it is or is not equipped and then report to the owner and to this commission or take such action as is necessary to comply with the law accordingly."

Freight Cars Accumulate

The total accumulations of freight cars, which had been reduced to 105,000 but had increased to 121,000 by June 25 as a result of the recurrence of the switchmen's strike in

several eastern cities, showed another increase in the report for the week ending July 2, to 129,278.

The deferred car requisitions for the week ending July 1, also showed an increase, averaging 130,670 for the United States and Canada, and 123,035 for the United States alone. Of the total 38,095 were coal cars.

The revenue car loading for the week ending July 10 showed a falling off, amounting to 757,666 cars as compared with 809,845 for the corresponding week of 1919, and 975,-

621 for 1918. Freight received from connections amounted to 615,068, as compared with 554,129 and 698,765.

The movement of the new grain crop in western states is now beginning and the granger roads are working to capacity to keep down accumulations. With an active export demand it is expected that there will be a heavy movement of grain to the Gulf ports. Lumber, general merchandise and building materials are moving in considerable volume.

New Priority Order Issued for Lake Coal

New England Objects to Export of Coal—Chicago After Abuse of Reconsignment Privileges

THE INTERSTATE COMMERCE COMMISSION, Division 5, on July 20 issued an additional order giving priority to coal transshipment across the lakes to the Northwest and Canada in accordance with a plan agreed upon at the meetings held in New York last week between the committee of coal operators appointed by the National Coal Association and committees of railroad officers. Representatives of the railroads and of the coal operators, accompanied by the fuel administrator of Minnesota, submitted the plan to Commissioners Clark, Aitchison and Potter of the Interstate Commerce Commission at a conference on Monday, together with a draft of a proposed order, which, with some modifications, was issued by the commission on the following day.

The commission had previously issued a priority order for lake coal but experience has indicated that it has not entirely served the purpose because the necessary amount of coal was not being billed to the lakes. Service Order No. 10 names the specific coal carrying railroads serving the mining districts which have contracts for lake coal and directs preference and priority both in the supply of cars and in the transportation of coal consigned to the lake pool and also authorizes the placing of embargoes on the supply of cars for or the movement of coal to other destinations. H. M. Griggs, the manager of the lake pool, is authorized to establish percentages of the total number of cars to which the shippers are entitled, which it is understood will represent the proportion in which the various mines hold contracts for lake coal, and after shipments to the extent of these percentages have been made any other available cars may be shipped in other directions. It has been estimated that to supply the needs of the Northwest will require a daily loading of 4,000 cars.

The order contains the usual paragraph reciting that an emergency exists because of a shortage of equipment and congestion of traffic aggravated by unfavorable labor conditions, and the inability of the roads east of the Mississippi river properly and completely to serve the public in the transportation of coal; that the people in Michigan, upper peninsula, Wisconsin, Minnesota, North Dakota and South Dakota, Montana and Canada are in a large measure dependent upon bituminous coal which must be transported from mines in Pennsylvania, Ohio, West Virginia and Kentucky by rail and lake during the season of lake navigation ending about November 1 each year and that the rate at which coal has been and is now being transported to that territory by rail and lake is not sufficient to meet its requirements or to assure the peace, health and welfare of the people. The order then continues:

"It is ordered, That until the further order of this commission, the Baltimore & Ohio Railroad Company from coal

mines west of Grafton, W. Va., and Meyersdale, Pa.; the Pennsylvania Railroad Company and the Pennsylvania Railroad Company—Western Lines from coal mines on main and branch lines west of Latrobe, Pa.; the New York Central Railroad Company from coal mines in the state of Ohio; Louisville & Nashville Railroad Company from coal mines on and east of the lines from Cincinnati, Ohio, to Jellico, Tenn.; the Wheeling & Lake Erie Railway Company; the Hocking Valley Railway Company; the Toledo & Ohio Central Railway Company; the Pittsburgh & West Virginia Railway Company; West Side Belt Railroad Company; Bessemer & Lake Erie Railroad Company; the Pittsburgh & Lake Erie Railroad Company; Pittsburgh, Chartiers & Youghiogheny Railway Company; Montour Railroad Company; the Monongahela Railway Company; the Kanawha & Michigan Railway Company; the Chesapeake & Ohio Railway Company; Norfolk & Western Railway Company; Coal & Coke Railway Company; Union Railroad Company (Pennsylvania); the Sandy Valley & Elkhorn Railway Company; Pittsburgh, McKeesport & Youghiogheny Railway Company; Kanawha & West Virginia Railroad Company, and Long Fork Railway, each of which is a common carrier by railroad subject to the Interstate Commerce Act be, and they are hereby, authorized and directed to give preference and priority in the supply of cars for and in the transportation of bituminous coal consigned to the Ore & Coal Exchange (the address of which is Perry Payne building, Cleveland, Ohio), at any Lake Erie port for transshipment by water as a part of a pool or pools of lake cargo or bunkerage coal at any such port; and to place an embargo on the supply of cars for or the movement of all other bituminous coal in carloads to any other consignee or destination; *provided*, that this order shall not apply to coal loaded in cars furnished, placed or assigned under any order or direction hereinbefore or hereafter entered by the commission; *and provided further*, that after a producer and shipper of bituminous coal, served by any of said common carriers in the said territories, has on any day shipped to the said Ore & Coal Exchange at any of the said ports a percentage (to be determined and announced for each coal producing district by H. M. Griggs, manager of said Ore & Coal Exchange, who is hereby designated as an agent of the commission therefor) of the total number of cars to which the shipper is entitled on the said day, then this embargo shall not apply to the said shipper for the remainder of the said day to ship the remainder of the cars to which he is entitled to any consignees and destinations he may desire, including the said Ore & Coal Exchange, and the said Lake ports.

"It is further ordered, That bituminous coal in carloads consigned to the said Ore & Coal Exchange up to the percentages hereinbefore referred to shall not be subject to re-

consignment except upon a permit and direction therefor issued by the said H. M. Griggs, who is hereby designated as an agent of the commission therefor, which permit and direction shall be issued by him only upon a showing that the coal so to be reconsigned will go to a Lake pool or pools:

"It is further ordered. That the percentages hereinbefore referred to shall be subject to change from time to time by the said H. M. Griggs upon one day's notice to the carrier or carriers concerned.

"It is further ordered. That this order shall be effective on and after July 26, 1920, until the further order of the commission."

Members of the Canadian Railway Commission held a conference with members of the Interstate Commerce Commission on July 17 to discuss the need of coal from the United States in Canada.

The Interstate Commerce Commission on July 15 issued a notice to the railroads, saying the commission's attention has been called to the fact that railroads frequently confiscate coal consigned to government departments. It is obvious, the notice says, that railroads should refrain from confiscating coal consigned to the War Department or other government departments. The commission had previously issued a warning against confiscation of coal consigned to public utilities.

New England's Complaint

The report of an investigation made in behalf of the six governors of the six New England States says that those states need 25,000,000 tons of bituminous coal yearly and that at the present rate of movement there will be a shortage this year of 6,400,000 tons; and New England factories will be forced next winter to run on half time. The Interstate Commerce Commission's order purported to help New England in (1) the supply of cars, (2) priority in car movement and (3) in dumping at the piers; but according to the governors' report the expected advantage has not been realized. Foreign vessels still monopolize an unreasonable share of the dumping facilities at Hampton Roads. James J. Storrow, fuel administrator of Massachusetts, testifying before the Senate Committee in New York City this week, said that in the interest of New England there ought to be a rigid embargo on the export of coal. The English government has restricted coal exports one-third, this being necessary to protect British industry. Mr. Storrow said that American coal is being advertised for immediate delivery in Italy, and that the railroads of Egypt, on which traffic had had to be curtailed for lack of fuel, are being run on American coal.

In Washington, critics of New England interests say that the vessel room which has been assigned to New England since the Interstate Commerce Commission's order has not been utilized and that the real difficulty is the refusal of New England buyers to pay the high prices now asked. The governors' report, on the contrary says that \$22 a ton is being paid at Boston for large lots. Many New England consumers who have fully covered their year's requirements at normal prices, say \$4 or \$4.50, are now unable to get coal shipped on their contracts, but they are able to get plenty of coal by paying \$11 or \$12 at the mines. This means, says Mr. Storrow, that thousands of cars of coal are being held in terminals and on the sidings for reconsignment by speculators; in fact, this condition is so serious, he says, that a prominent railroad officer recently brought it to the attention of the Interstate Commerce Commission.

Reconsignment Privileges Abused

The transportation situation in the Middle West has been featured by the inquiry into coal traffic conducted by the Illinois Public Utilities Commission. Alarmist reports re-

garding the scantiness of next winter's coal supply in Chicago, in circulation for some time, eventually culminated in the institution of an investigation by the state commission.

At the outset the fact was developed that coal has been coming into Chicago in large quantities for some time, but because of the abuse of reconsignment privileges, this coal has either been held for better prices or shipped to other points where it could be sold at larger profit.

As the investigation progressed it was found that Chicago's threatened fuel famine next winter is the result of widespread speculation on the part of wholesale coal dealers. The result was that the commission appealed to the Interstate Commerce Commission for an embargo on reconsigning and "blind" billing of coal cars. This appeal the Interstate Commerce Commission refused on the grounds that such action, taken universally, is unnecessary and would cause much needless harm. The appeal, however, did have the one result of focusing attention on practices which are in vogue in the coal industry generally. This fact, coupled with the orders which have been issued by the Interstate Commerce Commission and the Commission on Car Service, has produced a more normal handling of the coal supply in the Central West and the Northwest and both shippers and railroad men are of the opinion that a crisis has been averted. In particular, since the hearings began there has been a noticeable improvement in Chicago's coal supply.

J. F. Porterfield, general superintendent of the Illinois Central, was instrumental in pointing out the abuse of the reconsignment privilege to the state commission and prevailing on that body to appeal to the Interstate Commerce for relief. The Illinois Central figures, he showed, proved that 91,530 loaded coal cars came into the yards between July 1 and July 12—106 per cent more than came during the same period in 1919, and 7 per cent more than in the same period of 1918.

Mr. Porterfield could not give figures on how much of the coal had been reconsigned, but cited as an example that 1,227 cars, marked for reconsignment have been received in the yards since July 1. Of these 551 have been reconsigned. The others are still in the yards, presumably waiting to be sold at a price which will make it worth while to take them further than the Chicago market.

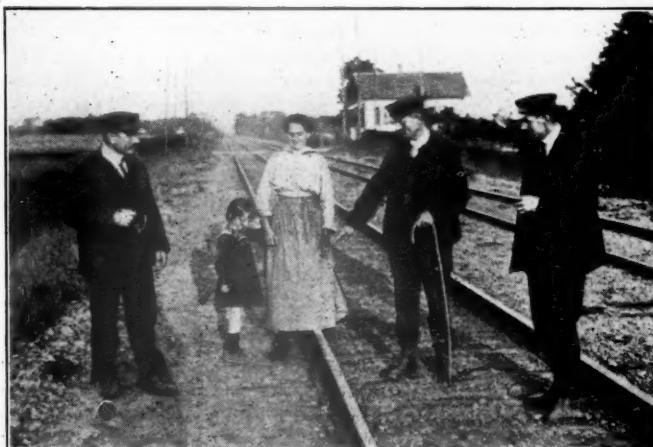


Photo from International Film Service

Radeau, the Railroad Worker Who Found President Deschanel of France, After the Latter's Fall from His Private Car Is Pointing to the Place Where the President Fell from the Train.

General News Department

The Michigan Central, the New York Central and the Wabash, will begin track elevation at Livernois avenue, Dix avenue and Waterman avenue, in Detroit, Mich., this summer. In conjunction with the work the city is to extend Military avenue across the right of way of these railways and will construct a subway at its own expense.

The United States Circuit Court of Appeals at Asheville, N. C., on July 19, suspended the injunction recently granted by the Federal District Court in West Virginia restraining the Baltimore and Ohio from accorded preferential treatment to certain coal mines. The court discussed the motion for two days and appears to have ordered the suspension pending further consideration of the matter.

Five thousand to six thousand dollars is the salary named in the latest announcement of the United States Civil Service Commission, which is of an examination, up to August 31, for assistant director of statistics for the Interstate Commerce Commission. Applicants must be from twenty-five to fifty years old and must have had at least three years' responsible experience. Experience in directing the work of a considerable force of clerks, during this period, will be essential; mere routine statistical work will not be acceptable. There will be no minimum requirements as to education, but persons having the equivalent of a four years' high-school course (14 college entrance units) will receive a rating of 70 per cent on education. Persons whose education has been along the lines of economics or engineering may offer such special training in lieu of not to exceed two years of railroad experience required. Such persons, however, must have specialized in some phase of economics or engineering which would fit them especially to interpret railroad statistics, and must offer at least thirty semester hours of graduate work for each year claimed in lieu of railroad experience.

Examination for Car Inspector

The United States Civil Service Commission announces an open competitive examination for senior inspector of car equipment. The Interstate Commerce Commission wants men in valuation work at entrance salaries from \$2,100 to \$3,600 a year. Applicants should have had five years' practical experience in car construction or in repair shops, and also some in cost estimating of car construction and repairs, and must have been in active service within two years next preceding the date of their application. They must be 25 and not over 60 years of age. Persons wishing to take this examination should apply, by or before August 24, for form 1312, stating the title of the examination desired, to the Civil Service Commission, Washington, D. C., or to a secretary of the United States Civil Service Board, one of whom can be found in each of the principal cities.

Another Deficit in May

A partial summary of railway returns for May and for five months of this year, issued by the Interstate Commerce Commission, indicates that roads operating 196,000 miles have earned practically no net operating income this year, except the \$50,000,000 of back mail pay taken into the accounts in January. The summary does not include reports of 37 roads, among which are such large systems as the Pennsylvania, the Illinois Central and the Chicago, Burlington & Quincy; but it shows for the five months a net operating income of only \$47,923,347, as compared with \$82,947,746, in the corresponding months of 1919, and practically all of this must be the back mail pay. For May, the roads included in the summary show an increase of \$36,000,000 in revenues, but an increase of \$66,000,000 in expenses, and a deficit of \$7,266,964 as compared with a net operating income of

\$31,730,918 in May, 1919. The eastern roads for May show a deficit of \$9,830,489, the Southern roads a net operating income of \$3,309,204 and the Western roads a deficit of \$745,679.

Civil Engineers' Convention

Herbert S. Crocker, acting secretary, New York City, announces the fiftieth annual convention of the American Society of Civil Engineers, which is to be held at Portland, Oregon, on Tuesday, Wednesday and Thursday, August 10, 11 and 12. The chairman of the local committee is George C. Mason, Gasco Building, Portland. The meetings are to be held at the Multnomah Hotel. The annual address of President Arthur P. Davis will be delivered on Tuesday morning.

C. P. R. War Veterans

The Canadian Pacific has in its service a total of 18,330 returned soldiers. When any employee sailed for voluntary service overseas, he carried with him credit for six months' pay and the promise of a position awaiting his return. That promise was more than kept, for the scale of pay was raised during the war to correspond with the increased cost of living. Moreover, for all new openings preference has been given to returned men in general. The actual figures up to June 30, 1920, are as follows: Total reported as joining the army, 11,062; dead, 1,100; wounded, 2,088; re-employed in the service, 7,008; other soldiers given employment, 11,322; and total soldiers given employment, 18,330. Of the Canadian Pacific men who have been re-employed 370 won special distinction, and two of them, John P. Robinson and R. N. Stuart, received the Victoria Cross.—Montreal Herald.

Retrenchment on the Pennsylvania

The Pennsylvania Railroad Company announced on Monday last that "in order to bring about efficiency in the operating forces and to curtail expenses as far as practicable it has been found necessary to effect a reduction of approximately 10 per cent" in the number of employees in the Eastern region (lines east of Altoona). The statement issued said that "care would be exercised in making the contemplated changes so as not to interfere in any way with the ability to handle traffic or to make prompt repairs to cars and locomotives." It was said that the majority of the changes would be among men in repair shops, car cleaners and clerks in the shops and general offices. Ten per cent would mean between 11,000 and 12,000 employees in the Eastern region.

A statement was issued at Philadelphia to the effect that many of the men dismissed would be needed at other points in the system, particularly in the central region, in and about Pittsburgh, and that every endeavor would be made to find places for as many as possible.

Questions by reporters brought out a few additional details. An officer is quoted as saying: "We're going right on running the railroad. But we are not going to carry a lot of deadwood on the payrolls. We are going to operate efficiently and get rid of the surplus accumulated through a variety of causes." Another said that women would suffer more than men. Office heads, without intending to detract from the qualities of women workers as a whole, say that a good many who came in during the war were better salary drawers than workers. They complain of "girls who paraded through the Broad Street Station with their arms about each other when they should have been at their desks." Reference was made also to well known former utterances concerning inefficiency in shops, due to the abolition of piecework rates and to losses due to the adoption of the eight-hour-day.

"It is unfortunate," said one officer, "that the order should

come at the time when there is talk of a strike, but decision to take this step was made some time ago and is in no way connected with the matters under arbitration."

Which Should Have Right of Way?

The Southern Pacific Lines in Texas, in a placard suitably illustrated, and posted in its stations and other places, calls on automobile drivers to consider, as between themselves and the locomotive runner, which of the two has the advantage, in case of a mishap, or miscalculation at a crossing. Under the heading "Stop a Minute," the placard says:

In the years 1917 and 1918 there were 4,325 collisions between trains and automobiles on highway grade crossings in the United States. Practically all could have been avoided. In these accidents 2,214 persons were killed and 6,109 were injured. A total of 8,323 persons.

An automobile traveling 30 miles an hour can stop within 50 feet and start again in 15 seconds. A train traveling 45 miles an hour will run a tenth of a mile in 8 seconds. The driver who figures on making the crossing first should consider this fact. How could the engineer anticipate or guard against collision under such conditions?

If the drivers of the automobiles in the 4,325 collisions had each expended a minute's time in stopping to be sure the crossing was safe, 2,214 persons would probably have been saved from death, and over 6,000 men, women and children saved from injury, mental and physical suffering, and expense.

Where is the line of least resistance? Will you stop a minute?

Will you help us all by playing safe?

Express Consolidation

At the resumption of the hearing on the application of the American Railway Express Company to continue its existence after September 1, before Examiner Butler of the Interstate Commerce Commission on July 19, Alfred P. Thom, Jr., on behalf of the Association of Railway Executives, announced that at the recent meeting of the member lines of that Association, in New York, 97 roads had voted in favor of making contracts with the American Railway Express Company; 14 had voted against, while six had reserved the right to vote later. Therefore, he said, the association entered no objection to the proposal to continue the consolidation. It takes the position, he said, that the public has a just right to expect that there will be, on September 1, an organized means of doing the express business of the country and that the organization of the American Railway Express Company, an existing and going concern, is the only one available.

H. G. Herbel, who at the previous hearing had indicated some doubt as to whether the Southwestern lines would oppose the consolidation, was not present when the hearing was resumed.

J. H. Beek, executive secretary of the National Industrial Traffic League, said that the league's committee had voted not to oppose the continuance of the consolidation and that position, he said, was endorsed at the recent meeting of the League at Philadelphia. The witness said that the position of the League is that an efficient express organization is demanded by commerce and while the service is very unsatisfactory at the present time, the League is not disposed to criticise it in view of all the conditions. The League does not favor a monopoly of the express business; but a condition, not a theory, confronts the country, he said. There is nothing to prevent any other organization engaging in the express business, Mr. Beek said, if it chooses to do so and can make contracts with the railroads. "We favor what seems to us the most probable means of speedy restoration of express service, and if after a reasonable opportunity has been afforded the express company to make the necessary additions to its facilities and improvements to its service the company shall fail to do so, at that time we shall reserve the right to be complainants."

Mr. Beek also presented a statement on behalf of the Boston Chamber of Commerce, made by the transportation

committee and approved by the Board of Directors, that the consolidation is necessary to assure adequate express service. The Adams Company, the statement said, is not in position to resume business. Wells, Fargo & Company have stated that they would not resume business separately. The United States company went out of business prior to the consolidation and the Southern is in no better condition than the Adams. The statement expressed a hope that the service will be improved as soon as shippers can refrain from using the express company's facilities for freight shipments.

Mr. Beek also said that he was authorized to say that the New England Traffic League takes the same position as the Boston Chamber of Commerce. Some members of the League, however, do not agree with the position taken by the organization and no attempt is being made to bind them to its position. The Philadelphia Chamber of Commerce had adopted a resolution opposing a continuance of the consolidation. Mr. Beek severely criticised the claim policy of the Adams and the Southern companies. In reply to a question by John E. Benton, representing state commissions, he said the League would be very glad to have the Interstate Commerce Commission take any action within its power to protect claimants, but when Mr. Benton suggested that Mr. Beek was not willing to go so far as to oppose the consolidation until the claim question could be straightened out, Mr. Beek said: "We don't think the consolidation ought to be embarrassed by the conduct of one of the constituent companies over which the American Railway Express Company itself has no control." He added that the question was not one merely of loss and damage claims but involved money actually paid by shippers on C.O.D. shipments.

Mason Mangum, counsel for the Virginia Corporation Commission, put on as a witness for his side of the controversy B. F. Goodman, of the Richmond Chamber of Commerce, to explain the treatment of Virginia shippers who had claims against the old companies. By turning their property and their personnel over to the consolidated company, the witness said, the old express companies have made it impossible to bring suit against them in Virginia or to find property on which to levy. Claimants, he said, have been obliged to deal with the New York office; and the claims remain unsettled, after two years.

The Detroit-Windsor Bridge

The proposed bridge over the Detroit river at Detroit, Mich., was discussed by the backers of that project in that city on July 15, at which time the details of the proposed structure and tentative plans for financing were made public. The plans contemplate a suspension bridge of 1,770 ft. clear span, carrying two 28-ft. roadways, two 7-ft. sidewalks, two street car tracks and four railway tracks. The main span will be 100 to 110 ft. clear of the water. Railroad approaches, on 1½ per cent grades will be about a mile long. The estimated cost of the bridge is \$28,000,000. The cost of a highway bridge at the same location would be about \$11,500,000, making the cost to add the four railway tracks about \$16,500,000. The projectors have assurances that \$10,000,000 can be provided locally and negotiations are under way for raising the remainder.

It is proposed to invite all the railroads to join the project on an equal basis, on the basis of calculations showing the cost per car to be not above the present cost of ferrying, and it is promised that in the near future it can be made much less. The number of railroad cars now crossing the river is estimated at 1,700,000 annually, and the projectors of the bridge calculate that "the railways available" could safely guarantee the bridge 1,000,000 cars a year by 1925. The cost of tunnels with capacity equal to that of the contemplated bridge is estimated at upwards of \$60,000,000.

The engineers have decided in favor of the suspension bridge design on the basis of economy, safety of erection, aesthetics and the time in which the structure can be completed. The engineering investigation has been conducted by Charles Evan Fowler, consulting engineer, New York City, while Gustav Lindenthal, New York City, has been retained as consulting engineer.

REVENUES AND EXPENSES OF RAILWAYS

MONTH OF MAY, 1920

Name of road.	Average mileage operated during period.			Operating revenues			Maintenance of equipment.			Operating expenses			Net from railway operation.	Railway tax accruals.	Operating income (or loss).
	Freight.	Pasenger.	Total	Way and structures.	Traffic.	Transportation.	General.	Total.	Onerating ratio.						
Galveston Wharf.....	1.3	\$111,329	\$170,426	\$29,593	\$3,355	\$31,711	\$2,386	\$83,605	70.74	\$34,773	\$15,900	\$8,773	\$8,773	\$8,773	
St. Louis, Brownsville & Mexico.....	548	4,575	4,575	720,354	116,080	93,887	12,518	287,651	74.16	186,133	12,300	17,231	36,985	36,985	
St. Louis-San Francisco & Texas.....	1,344	113,115	162,594	1,035,130	1,638,944	59,060	2,868,679	195,937	531,221	83,38	1,153,797	227,985	95,524	-122,224	
St. Louis Southwestern.....	968	1,367,011	180,378	1,687,384	32,972	29,292	1,568	81,102	6,513	151,448	108,61	-12,003	1,3890	-1,3890	
St. Louis S. W. of Texas.....	807	736	212,666	95,131	338,470	83,525	20,237	6,521	447,361	53,303	1,078,555	63,90	603,029	54,694	
San Antonio & Aransas Pass.....	3,563	2,700	70,494	3,903,664	856,311	1,082,230	86,344	2,035,867	144,673	4,237,549	108,55	-333,885	150,000	-45,023	
Seaboard Air Line.....	11	54,823	54,823	123,194	8,301	11,463	440	75,140	1,500	96,844	26,350	3,580	22,770	-47,368	
South Buffalo.....	779	18,379	118,875	683,731	20,589	251,233	18,527	381,695	31,614	908,705	132,90	-224,974	23,000	-247,976	
South Buffalo Ry. Co.....	111	6,001	8,050,023	2,915,914	12,050,629	6,238	150,639	4,909,872	242,399	18,070	436,142	127,08	91,672	15,000	-106,672
Alabama, Great Southern.....	313	581,883	197,107	844,677	75,109	1,674,94	31,637	29,704	19,219	2,324,072	71,33	242,160	34,414	207,747	
Cinc., New Orleans & Texas Pacific Co., Southern & Fla.	338	1,022,221	310,163	1,487,725	150,136	332,535	22,477	51,835	10,552	337,940	71,98	436,189	60,490	369,698	
New Orleans & Northeastern.....	207	108,621	108,354	566,476	67,417	120,399	30,803	8,684	14,725	40,247	11,987	89,35	10,250	20,997	
Northern Alabama & Miss.	110	100,385	100,427	50,151	70,929	50,224	2,304,307	3,089,921	176,685	107,905	89,96	130,05	12,494	108,037	
Southern Pacific S. S. Lines.....	2105	10,042,202	4,268,874	15,784,822	2,304,307	3,089,921	21,850	8,443	277,711	37,983	12,305,216	225,59	3,475,612	82,389	
Southern Pacific International.....	697	92,266	149,576	149,576	149,576	149,576	149,576	149,576	149,576	149,576	149,576	149,576	149,576	149,576	
Spokane, Portland & Seattle.....	538	8,944	17,132	112,726	21,449	62,337	11,231	2,723	41,831	9,066,407	75,23	9,636	2,984,222	412,524	
Ten Island Rapid Transit.....	23	82,760	100,020	209,248	29,818	32,494	1,674,94	31,637	29,704	10,552	2,324,072	71,33	242,160	34,414	
Tennessee Central & Ft. Smith.....	292	125,738	52,206	165,954	42,114	44,458	10,756	10,756	11,235	184,827	88,35	24,372	15,000	282,931	
Texas & New Orleans.....	93	134,266	21,942	165,832	19,215	10,645	1,928	6,285	6,380	211,056	87,21	20,997	56,272		
Texas & Pacific.....	1,946	1,946	92,896	3,106,195	618,504	642,056	42,528	8,267	8,267	14,725	4,028	12,494	11,119	19,127	
Toledo, St. Louis & Western.....	1,554	1,977,832	30,780	944,546	208,399	167,923	4,921	4,921	4,921	20,234,072	71,33	242,160	34,414		
Toledo & Ohio Central.....	503	64,282	85,602	193,558	292,210	292,210	6,768	6,768	6,768	168,234	123,44	20,997	56,272		
Trinity & Brazos Valley.....	368	108,342	20,709	136,300	48,502	44,17	3,917	6,034	6,034	107,330	31,332	20,997	56,272		
Ulster & Delaware.....	469	164,569	164,892	735,935	222,095	222,095	222,095	222,095	222,095	222,095	222,095	222,095	222,095		
Union Pacific (of Pennsylvania).....	3,614	8,701,079	1,732,442	9,480,312	2,060,521	1,605,226	21,174	2,685	2,685	2,685	2,685	2,685	2,685		
Utah R.R. (of Pittsburgh).....	40	10,632	10,632	11,232	11,232	11,232	11,232	11,232	11,232	11,232	11,232	11,232	11,232		
Vicksburg, Shreveport & Pacific.....	98	91,886	32,980	50,224	8,803	8,803	8,803	8,803	8,803	8,803	8,803	8,803	8,803		
Virginia.....	171	211,009	10,632	10,632	10,632	10,632	10,632	10,632	10,632	10,632	10,632	10,632	10,632		
Western Maryland.....	2,472	2,672,614	861,370	3,861,755	807,807	1,209,003	94,363	8,803	8,803	8,803	8,803	8,803	8,803		
Western Pacific.....	1,797	1,262,848	93,493	1,450,168	227,576	428,200	24,530	565,276	565,276	50,119	1,354,926	93,43	1,542,432		
Western Ry. of Ala.....	133	118,155	85,350	222,424	28,796	48,926	4,686	74,886	74,886	9,239	840,910	73,15	840,910		
Wheeling & Lake Erie.....	511	1,108,508	67,292	1,302,742	237,675	281,834	10,261	546,189	546,189	1,110,415	85,23	192,377	64,100	126,930	
Wichita Falls & Northwestern.....	328	1,622,642	40,998	58,319	1,822	1,822	1,822	1,822	1,822	1,822	1,822	1,822	1,822		
Yazoo & Mississippi Valley.....	1,381	1,798,937	2,388,053	558,376	579,733	24,508	579,733	579,733	579,733	579,733	579,733	579,733	579,733		
Alabama & Vicks.....	141	851,845	330,120	1,314,963	197,445	246,711	25,753	479,535	479,535	49,232	1,913,890	77,10	301,073	67,449	
Ann Arbor.....	361	1,467,718	256,895	1,871,640	254,513	419,850	28,660	973,899	973,899	59,560	1,736,090	92,76	135,550	85,900	
Arizona Eastern.....	377	1,240,987	26,774	1,645,051	327,731	246,922	17,599	553,931	553,931	85,490	1,243,386	75,58	401,666	47,620	
Atchison, Topeka & Santa Fe.....	87,93	643,248	20,456,631	81,170,104	11,181,332	19,295,824	864,422	1,428,103	1,428,103	1,428,103	1,428,103	1,428,103	1,428,103		
Atlanta & West Point.....	296	1,071,743	1,241,113	1,241,847	18,229	27,283	27,942	458,644	458,644	42,265	907,890	73,11	333,937	41,683	
Atlanta, Birmingham & Atlantic.....	639	1,714,063	355,708	2,317,617	504,999	661,291	87,595	1,192,411	87,045	2,533,670	109,32	-216,052	81,039	-297,975	
Atlantic City R. R.	177	1,573,415	776,439	1,439,709	2,322,634	203,674	6,804	2,787,789	2,787,789	1,192,411	92,92	101,794	6,500,190	369,725	
Atlantic Coast Line.....	4,891	20,159,240	8,187,740	31,417,030	4,05,060	5,990,402	248,098	13,681,056	628,965	24,916,840	79,30	-306,606	6,500,190	1,37,000	
Atlantic & St. Lawrence.....	166	155,395	1,242,453	1,242,453	1,242,453	1,242,453	1,242,453	1,242,453	1,242,453	1,242,453	1,242,453	1,242,453	1,242,453		
Baltimore, Chesapeake & Atlantic.....	87	339,430	120,922	504,897	43,426	263,015	5,094	337,080	18,334	666,949	132,09	-162,051	18,500	-180,551	
Bangor & Aroostook.....	658	2,111,497	40,696	2,120,717	30,801,768	7,341,517	1,045,366	8,046	8,046	80,245	18,289	85,99	10,187	85,99	
Beaumont, Sour Lake & Western.....	118	646,246	149,120	835,909	167,789	117,158	11,789	306,747	306,747	74,53	228,668	137,387	13,226	120,182	
Belt Ry. of Chicago.....	31	1,720,502	179,917	1,543,222	488,523	1,559,711	65,739	1,448,821	1,448,821	141,102	3,735,305	105,42	192,083	-81,282	
Buffalo, Rochester & Pittsburgh.....	589	6,146,137	666,059	7,100,912	1,053,930	2,650,142	7,930	3,65,532	180,572	7,333,991	103,28	-233,079	155,000	-388,731	
Birmingham Southern.....	31	167,296	236,174	251,570	155,672	185,580	4,834	147,285	147,285	16,944	227,130	96,17	9,044	8,771	
Bingham & Garfield.....	36	18,646,674	8,465,192	10,318,771	7,50,828	6,81,622	14,182	1,927,455	1,927,455	11,281	17,948	11,281	-22,948	-62,801	
Brooklyn Eastern District Terminal.....	9	328,942	34,857	36,492	103,118	183,744	543	277,668	277,668	1,153,797	30,625	1,164,638	-2,709,285	-12,112	
Buffalo & Susquehanna.....	296	1,071,743	1,131,746	218,612	488,538	11,376	4,237,549	4,237,549	124,476	9,411,902	455,281	17,671,006	1,123,630	-12,906	
Buffalo, Rochester & Pittsburgh.....	225	3,206,502	179,917	1,543,222	488,523	1,559,711	65,739	1,448,821	1,448,821	141,102	3,735,305	105,42	192,083	-81,282	
Birmingham Southern.....	31	167,296	8,345	10,207,717	7,50,828	6,81,622	14,182	1,927,455	1,927,455	11,281	17,948	11,281	-22,948	-62,801	
Canadian Pacific Ry. Lines in Maine.....	233	1,943,318	30,406	1,720,717	7,50,828	6,81,622	14,182	1,927,455	1,927,455	11,281	17,948	11,281	-22,948	-62,801	
Central New England.....	301	1,943,665	116,739	2,20,717	7,50,828										

Traffic News

The Board of Railway Commissioners of Canada announces that the application of the railways for authority to make a general advance in freight rates will be heard in Ottawa on August 10.

The Isthmian Steamship lines are inaugurating a service between Atlantic and Pacific coast ports, loading and discharging at New York, San Francisco, Cal., Portland, Ore., Seattle, Wash., and Vancouver, B. C. Monthly sailings will be maintained for the remainder of this year and later there will be semi-monthly sailings.

The St. Louis gateway is now in good condition and freight from all points east through St. Louis to the southwestern territory is moving freely. This announcement is made by the St. Louis-East St. Louis Traffic Committee to clear up the misunderstanding of those who have circulated reports that there are serious delays at that point.

F. P. de Hoyos, agent in New York City for the Mexican Government Railroad Administration, operating the National Railways of Mexico, announces that he is no longer the representative of the Mexican Railway Company, Ltd., which, on June 18, was returned to its owners. The Mexican Railway is represented in New York City by Carr Brothers, 65 Broadway.

Watch Your Competitor

"Aero Limited," an aerial passenger-carrying corporation, of which C. Nicholas Reinhart, Waldorf-Astoria Hotel, New York, is the "general passenger agent," reports that in the month of June 407 passengers were carried, despite the fact that official statistics show there were sixteen days of rain. Each passenger was carried an average of 52 miles, a total mileage of 21,164, and without accident. The statement says that July's business promises to eclipse that of June.

Chemicals Used in Water Purification

In reply to a request of the Secretary of the Treasury for the issuance of a priority order to promote the shipment of numerous chemicals used in water purification, the director of the Bureau of Service of the Interstate Commerce Commission has written a letter stating that the commission deems it inadvisable to give general priority to these essentials in public health work; but is willing to act upon requests giving full particulars in cases of individual shipments and to use its best efforts to expedite the movement of such shipments. The letter says that innumerable demands have been made upon the commission, for priorities in the furnishing of cars for the transportation of commodities and if this request were granted it would necessitate similar action with respect to many others and the result would only be additional confusion.

Farmers Lose by Shortage of Freight Service

"The railroad tangle is costing the farmers of this country hundreds of thousands of dollars daily," says J. R. Howard, president of the American Farm Bureau Federation, in a statement issued at Washington.

"With 25 per cent of last year's crop still remaining in the local elevators in some sections, and a totally inadequate movement of the new crop, local buyers find it necessary to protect themselves by wider margins. Constantly facing losses through demurrage, breach of contract, excessive storage charges and high interest rates, the local buyer feels called upon to offer the wheat producer prices much lower than those quoted at the terminal markets. These increases in margins all along the line probably cost the farmer at the local elevator a total of 10 cents or more a bushel. Neither is there any benefit to the consumer through this loss

sustained by the farmer. It is all pure loss—a sacrifice to inefficiency. The railroad laborer who has wilfully cut down his volume of work and repeatedly struck for increased wages may wake up to find that the increases he has caused in the costs of food, clothing and shelter more than offset the increases he has demanded in wages. There is no more damnable point at which labor can attack our economic structure, and, I might add, no surer way of cutting its own throat than by cutting down the efficiency and the carrying capacity of our arteries of transportation."

Canadian Railroads Ask Rate Increase

The Canadian Railway Association, representing all lines in the dominion, has applied to the Railway Commission for a 30 per cent increase in freight rates. The association announced that the application was based entirely on present costs of railway operation, including labor and materials. These increased costs, according to the application, exceed by enormous sums increased revenue obtained from the rate advance granted in August, 1918.

At that time wage increases were given employees based on increases in the United States under the so-called McAdoo award. Although these increases were accompanied by rate changes, the effect of the new rates was to add only \$43,000,000 to the gross revenues of the railways, as against \$80,000,000 additional wage costs, thus creating a discrepancy of \$37,000,000 for the first year.

Coal Production

The production of soft coal during the week ending July 10 is estimated at 9,803,000 tons, according to the weekly bulletin of the Geological Survey. The decrease of 490,000 tons below the output of the preceding week, attributed to the Fourth of July holiday, was not as great as had been anticipated. The average rate of production on the five working days of the week was the greatest attained since the middle of January and on Sunday and the holiday the railroads were able in part to catch up in their work of placing cars. That production is on the increase is shown by preliminary reports on loadings on the first three days of the following week, July 12, 13 and 14, which have been at a rate of 5 or 6 per cent greater than that before the holiday. The total production for the calendar year to July 10 is estimated at 272,170,000 net tons, an average of 10,225,000 a week, and about 44,000,000 tons greater than for the corresponding period of 1919. For the week ended July 3 there was a reduction in the time reported lost on account of car shortage. The total transportation loss was 35.3 per cent of full time as compared with 37.9 per cent during the preceding week. Signs of a positive improvement in car supply were to be found in the reports for Central and Southern Illinois, Northern Ohio, Section B of Central Pennsylvania, the West Virginia Panhandle and the smokeless fields of Southern West Virginia, also in the Hazard and Northwest Kentucky districts, but transportation is said to be still the dominant factor limiting production.

Lake shipments for the season now stand at 4,684,000 tons as against 9,470,000 tons in 1918, and 10,930,000 in 1919. Incomplete returns on stocks of fuel held by the railroads indicate that on June 1 they were unusually low and that between February 29, the close of federal control, and June 1 there was a sharp decline in stocks. These statements are based on reports to the American Railroad Association made by 120 of the principal carriers. Stocks of bituminous coal held in cars by these roads declined 7 per cent from February 29 to June 1. Stocks in pools declined 34 per cent. For all stocks the percentage of decrease is given as 21.

About 47,756,000 bushels, or 5.1 per cent of last year's wheat crop, was still on the farms on July 1, according to a bulletin issued by the Bureau of Crop Estimates of the Department of Agriculture. This compares with 19,261,000 bushels on July 1, 1919, and 31,923,000, the average of stocks on July 1 for five years 1914-1918. The July forecast for the new wheat crop is 809,000,000 bushels, as compared with 941,000,000 for 1919.

Commission and Court News

Interstate Commerce Commission

The Commission has suspended from July 18 to November 15, the operation of an item in a Chicago, Peoria & St. Louis tariff, naming increased switching charges on soft coal, c.l., from Citizens Mines "A" and "B" at Springfield, Ill., to junctions with connecting lines at Springfield.

The Commission has further suspended from August 3 until September 2 the operation of proposed tariffs cancelling joint through rates on bituminous coal from points on the Sewell Valley in West Virginia to tidewater points and certain other destinations, the operation of which was suspended from April 3 to August 3, by an order previously entered.

The Commission has further suspended from August 4 until September 3 the operation of items in a Chesapeake & Ohio tariff cancelling a switching rate on coal, c.l., from the Federal Coal Company's tipple at Elkhorn City, Ky., to connection with the Carolina, Clinchfield & Ohio, destined to various southeastern points, the operation of which was suspended from April 6 to August 4, by an order previously entered.

The Commission has suspended from July 20 to November 17, the operation of Rule No. 23 of a tariff filed by F. W. Gomph, agent, which provides that freight charges on traffic from points in the United States to points in Canada must be paid in United States currency. The entire question of the payment of freight on shipments to and from Canada was the subject of a conference on July 19 between members of the Interstate Commerce Commission and of the Canadian Railway Commission.

Refrigerator Cars Two Cents a Mile

The Interstate Commerce Commission has approved the application of J. E. Fairbanks, agent, for permission to file tariffs increasing the mileage to be allowed by railroads to owners of privately owned refrigerator cars to two cents a mile, effective not earlier than August 31.

State Commissions

The Monroe & Texas was granted authority June 29 to abandon and remove that portion of its line south of Lenwil, La., by the Railroad Commission of the State of Louisiana.

The Corporation Commission of Virginia has decided that it has no authority to regulate the rates of the Pullman Company, a sleeping car company being not a common carrier, but a traveling hotel.

A safety conference was held recently at Madison, Wis., by representatives of steam and electric railroads operating in the state. The meeting was called by the railroad commission to promote the enforcement of safety measures at crossings of steam railroads by electric lines. Prior to the holding of a second conference, a survey of the conditions at the many crossings in the state will be made.

The New York State Public Service Commission, second district, has ordered the New York Central to move freight between the Erie Basin Barge Canal public terminal at Buffalo and industries adjacent to its tracks or at other points with which it can interchange traffic.

The order was issued in response to a complaint by the Superintendent of Public Works. It stipulates that the railroad shall provide engines and cars for all traffic in and out of the Barge Canal terminal, as well as spot, place and remove cars. The railroad is to file a tariff within thirty days covering charges for all service over its lines and connecting roads.

Physical connection of the railroad tracks and the State Barge Canal terminal has been provided by the State. The order holds that the connection is practicable, and has been made with due

regard to safety, and that the amount of business is sufficient to justify the order.

Court News

A railroad employee, hired to guard property from theft, who was sent ahead of an interstate train to secrete himself and guard it, and who was shot by persons stealing coal from other cars standing in the yard, was not then engaged in interstate commerce within the act.—Chicago v. Alton v. Industrial Commission (Ill.) 125 N. E., 378.

The Iowa Supreme Court holds that a trackman, injured while unloading rails to be used in repairing a track used by a railroad company for the movement of interstate as well as intrastate trains, was employed in interstate commerce, whether the rails had come from another state or not.—Lammers v. C. G. W. (Iowa) 175 N. W. 311.

The North Carolina Supreme Court holds that a carpenter, killed while repairing a coal chute used for coaling intrastate and interstate trains, was not engaged in interstate commerce, so that action for his death might be maintained under the federal act; to bring an employee under the act, the service should be a part of interstate commerce or in aid of interstate transportation so as to be practically a part of it.—Capps v. A. C. L. (N. Car.) 101 S. E. 216.

The Illinois Supreme Court holds that proof that injury to a railroad yard watchman occurred at the place where he would be while performing his special duty to watch for thieves on an interstate train is not inconsistent with his then being in the performance of his general duties of watchman, bringing him within the Workman's Compensation Act, instead of the federal Employers' Liability Act. Where part of employee's duties are connected with interstate commerce, the employer, seeking to avoid liability under the Workmen's Compensation Act on the ground that liability, if any, is under the federal Employers' Liability Act, has the burden of showing that the employee was engaged in interstate commerce at the time of the injury.—Atchison, T. & S. F. v. Industrial Commission (Ill.) 125 N. E. 380.

Hours of Service Act—Day and Night Station

The federal district court for the Southern District of Texas holds that where a telegraphic train despatching service is maintained by a railroad company at a station continuously during the 24 hours, the fact that during the nighttime the messages are handled by operators of another company does not prevent the station from being one "continuously operated night and day;" and operators may not be on duty more than 9 hours in a 24-hour period.—United States v. Baker, 261 Fed., 703.

Inadequate Compensation for Use of Railroad Under Federal Control Act

The federal district court for the Northern District of Illinois holds that the amount of annual compensation offered by the Director General of Railroads for the use of the Chicago & Eastern Illinois, then in the hands of a receiver, while under federal control, namely, \$3,280,000.88, was inadequate, and the receiver was instructed to decline the offer and to proceed under Federal Control Act § 3, to have the amount of just compensation determined.—Railway Steel Spring Co. v. C. & E. I., 261 Fed., 690.

Railroad Grant Lands Tendered for Lien Lands Must Be Not Less Than 40-Acre Tracts

A land grant to the Southern Pacific (14 Stat. 292) provides that where lands are lost to the company for any reasons therein specified, other lands may be selected in lieu thereof. The Court of Appeals of the District of Columbia holds that the grant is not violated by rulings of the Secretary of the Interior that the company must not tender fractions of 40-acre tracts, where it is not shown that the company will be prevented by such rulings from utilizing the base lands.—Southern Pacific v. Lane, 263 Fed. 637.

Foreign Railway News

New Railway Construction in China

LONDON.

The construction of a branch line of the Canton-Hankow railway, China, from Changsha to Changtek, a distance of over 100 miles, is now being undertaken.

Passenger Trains Between Italy and Germany to Resume Service

LONDON.

The Italian Ministry of Transport has been in negotiation with the German Railway Administration as to the resumption of passenger traffic between Germany and Italy, and it has been decided to run through trains again as soon as possible between the two countries. At first four trains will run, two between Holland and Rome and two between Berlin and Rome via Leipzig, Hof, Ratisbon, Brenner, Mona, Florence, Rome and on to Naples.

Rhodesian Railway Rates Increased

LONDON.

At the general meeting of the Rhodesia Railways, Rochfort Maguire, the president, said that the demands of the transport trade of Rhodesia, in spite of the temporary fall in tonnage during 1919, were increasing and no restriction of services towards meeting the rise in operating expenses was practicable. In the circumstances the obvious and only remedy was to increase rates. On April 1, last, an increase of 10 per cent was made in passenger fares and 25 per cent in freight rates. It is too early yet to ascertain the ultimate effect of these additional charges upon the company's revenue.

Disposal of the Swiss Government Loan

It is understood that the proceeds of the \$25,000,000 Swiss government loan, announcement of which was made in the July 9 issue of the *Railway Age*, which will be spent in the United States, will be used for the purchase of such material as steel tubing, copper, insulators and possibly rails, rather than for completely finished machinery. It is not probable, however, that much of the total amount will be used for copper, as the Swiss government has been able, since the signing of the armistice, to purchase enough copper in Europe to supply their needs until 1922.

New Railway in Argentina

LONDON.

The Board of Trade Journal says that the government of the Province of Corrientes, Argentine Republic, has granted a concession to an American syndicate to construct a railway line in that province and to exploit it for 50 years, although the Government reserves the right of expropriating the permanent way, rolling stock and other assets of the concern at any time upon payment of the real value plus a premium of 20 per cent. It is stated that the stations will be located at places to be selected by the government of that province and that in order to prevent land speculation, the ground adjoining the stations will be subdivided and offered for sale at prices which will be decided upon beforehand. The title of the new concern is to be that of "Ferrocarril Colonista Correntino."

Receipts and Expenditures on English Railways

LONDON.

The Ministry of Transport issued on July 3, a statement regarding the financial results of the working of the railways during the months of April and May. The total revenue earned for the month of April was £18,773,869, and for May £19,650,271. The total expenditure during April was £18,531,236, and May £19,014,340, giving a balance of revenue over expenditure for the month of April of £242,633 and May £635,931. The standard year proportion of net receipts under the given guarantee was for April £3,614,000, and May £3,780,000, to which

is added for interest on capital works brought into use, April £88,000 and May £88,000. Thus the net Government liability for the month ended April is £3,541,594 and for May £3,351,579, or approximately \$17,000,000 and \$16,000,000, respectively. The traffic revenue earned was distributed roughly as follows:

	April	May
Passenger train traffic.....	£8,441,684	£9,373,687
Goods train traffic.....	11,163,749	11,113,667

East Africa and Uganda Railways

The question was raised in the British Parliament on June 14 as to the railways which it is proposed to build in British East Africa or Uganda in the immediate future, and whether the construction of such railways would be placed to open tender, writes Consul General Robert P. Skinner to Commerce Reports. The official statement of the government in reply to the inquiries was:

"The new railways contemplated in eastern Africa are a line from Nakuru, on the Uganda Railway, through Eldama and Eldoret to Sov, on the northwest of the Uasin Gishu Plateau, and an extension of the Nairobi-Thika branch for a distance which is still under the consideration of the governor. It is not at present intended to place construction to open tender; the absence of detailed information as to the route of the Uasin Gishu Railway makes it necessary to arrange for a joint survey by the government and any contractor, and for this purpose it is impossible to negotiate with more than one firm at a time. Arrangements are in progress with Griffiths (Ltd.), of Nairobi, for a contract which will relate to the survey only, but it is to be presumed that if a contract price can be agreed upon as a result of the survey the construction contract will be given to the same firm."

Bolshevist Russia's Economic Disaster

LONDON.

The London Times is able to publish some interesting information regarding the state of Bolshevik Russia, which is contained in a memoir from a member of the Council of People's Economy (Sovnarkhos), a Bolshevik body, on the present situation of Soviet Russia.

The document, which is dated last March, confesses that the economic position of Soviet Russia is becoming worse. In the big factories the output is only 10 per cent of that in pre-revolution days and many of the factories have closed down. All efforts are devoted to maintaining the diminishing transport service and supplying the army. In spite of this only 15 per cent of the locomotives are being repaired and the output of new locomotives is at the rate of 40 to 50 a year against 800 to 1,000 under the old regime. Railways are falling to pieces and experts predict that by August of this year railway communication will practically have come to a standstill. In order to repair locomotives it is necessary to take from one engine the parts which are required to repair another. By this method it is possible to repair, on an average, one locomotive by collecting the spare parts from seven others.

There is a great lack of fuel (the wood used being of the 1919-1920 season and therefore still full of sap) and lubricating oils; white metal for railway bearings which are gradually being replaced by oak bearings lubricated by graphite and there is also a shortage of steel for railway wheel tires. Only one Martin oven at the Koulebak Works provides the whole of Soviet Russia with steel for railway wheel tires. The non-existence of steel for springs makes it impossible to replace the weakened springs, and in consequence the buffers and coupling hooks of the different cars are so far out of alignment that the cars cannot be coupled together. The pneumatic brakes are completely out of order, as well as all the lighting and heating apparatus.

Although the means of transport is so seriously impaired the government proposes to electrify the railways. Members of the government think that under the most favorable conditions this can be started by 1928, provided that the iron producing and metallurgic industries will be partially revised in 1927 and that the maximum amount of help from Germany is obtained. The views of the engineers are more pessimistic, as not only the rolling stock, but also the permanent way, water-supply, workshops, apparatus for signaling and the like are in a state of dilapidation. In their opinion it is necessary to invest 3,000,000,000 of gold roubles (\$1,500,000,000) to make the Russian railways more or less fit to meet the requirements of the country.

Equipment and Supplies

Locomotives

THE HAVANA CENTRAL is in the market for 10 Consolidation locomotives.

THE ALGOMA EASTERN has ordered 2 locomotives from the Montreal Locomotive Works.

THE CENTRAL CUNAGUA (Cuba) will have one locomotive built at the Baldwin Locomotive Works.

THE CENTRAL ROSALIA (Cuba) will have one locomotive built at the Baldwin Locomotive Works.

THE CENTRAL GALOPE (Cuba) will have two locomotives built at the Baldwin Locomotive Works.

THE CENTRAL REFORMA (Cuba) has ordered 1 locomotive from the American Locomotive Company.

THE CENTRAL ORIENTE (Cuba) will have one locomotive built at the Baldwin Locomotive Works.

THE CENTRAL JARONU (Cuba) will have six locomotives built at the Baldwin Locomotive Works.

THE CENTRAL AUSTRALIA (Cuba) will have one locomotive built at the Baldwin Locomotive Works.

THE CENTRAL ALGODONES (Cuba) has ordered 1 locomotive from the American Locomotive Company.

THE CENTRAL SAN CHRISTOBAL (Cuba) will have three locomotives built at the Baldwin Locomotive Works.

THE SOUTH MANCHURIAN RAILWAY has bought parts, accessories and material for 3 Pacific type locomotives and 6 Decapod type locomotives to be built in its own shops at Shakako, near Darien, Manchuria.

THE SOUTHERN PACIFIC is building 14 switching locomotives and six 10-wheel locomotives in its shops in California, and 10 Mikado type locomotives are to be built in the shops of the Morgan's Louisiana & Texas Railroad at Algiers, La.

THE VANADIUM CORPORATION OF AMERICA, New York, has ordered from the Davenport Locomotive Works two saddleback tank locomotives of 10-ton weight, to use either oil fuel or coal and to be equipped with air brakes, for use on its new line in Peru.

THE ERIE RAILROAD will be in the market for about 75 locomotives when plans now under way have been completed to finance the purchase of this equipment. The Association of Railway Executives has recommended to the Interstate Commerce Commission that it approve a loan of \$1,242,500 to the Erie for this purpose, as noted in the *Railway Age* of July 2.

Freight Cars

THE HAVANA CENTRAL is in the market for 100, 40-ton flat cars.

THE CHICAGO & NORTH WESTERN is inquiring for 50 caboose cars.

THE PENNSYLVANIA RAILROAD is inquiring for from 500 to 750, 70-ton hopper cars.

THE JOINT PURCHASING COMMISSION OF INDIANA is inquiring for 150 hopper cars.

THE AMERICAN STEEL & WIRE COMPANY is inquiring for 50, 50-ton steel gondola cars.

THE E. M. JONES COMPANY, Toledo, Ohio, is inquiring for from 500 to 700 freight cars.

THE DOMINION SHIPBUILDING CORPORATION, Toronto, Can., is inquiring for 50, 40-ton freight cars.

THE CHICAGO & NORTH WESTERN has ordered 500 stock cars from the Bettendorf Company, Bettendorf, Ia.

THE NEWPORT NEWS SHIPPING & DRYDOCK COMPANY, Newport News, Va., is inquiring for 20 flat-bottom gondola cars.

THE LEHIGH VALLEY is having 500 steel coal cars repaired at the shops of the Middletown Car Company, Middletown, Pa.

THE TENNESSEE COPPER & CHEMICAL CORPORATION, 61 Broadway, New York, is inquiring for from 150 to 175, 7,000-gal. tank cars.

THE WEST INDIA SUGAR FINANCE CORPORATION, 129 Front street, New York, is inquiring for one 5,000-gal. narrow gage tank car for export.

THE NORTHERN PETROLEUM COMPANY, Pittsburgh, Pa., has ordered 20, 8,050-gal. capacity tank cars from the Pennsylvania Tank Car Company.

THE WONHAM, BATES & GOODE TRADING CORPORATION, 17 Whitehall street, New York, is inquiring for one 3,000-gal. narrow gage tank car for export.

THE ILLINOIS CENTRAL, reported in the *Railway Age* of June 16 as inquiring for 300 stock cars, has ordered this equipment from the American Car & Foundry Company.

THE ELGIN, JOLIET & EASTERN, reported in the *Railway Age* of July 9 as being in the market for from 500 to 1,000, 70-ton gondola and 1,500 hopper cars, has withdrawn its inquiry for this equipment.

THE VANADIUM CORPORATION OF AMERICA, New York, has ordered from the Western Wheeled Scraper Company 12 dump cars of 8 cu. yd. capacity, to be equipped with airbrakes, for use on its new line in Peru.

Passenger Cars

THE NEW YORK, ONTARIO & WESTERN is inquiring for 15 express cars.

THE ILLINOIS CENTRAL has ordered 35 passenger cars from the Pullman Company, Chicago.

THE HAVANA CENTRAL has ordered 10 combination baggage and mail cars from the Osgood Bradley Car Company.

Iron and Steel

THE WABASH is offering 800 tons of scrap iron for sale.

THE SOUTHERN is offering 2,200 tons of scrap iron for sale.

THE NORTHERN PACIFIC is offering 600 tons of scrap iron for sale.

THE GREAT NORTHERN has ordered 266 tons of I-beam spans from the Wisconsin Bridge & Iron Company.

THE CHICAGO & NORTH WESTERN has contracted for 124 tons of steel towers for water tanks to be erected at Chicago by the Chicago Bridge & Iron Works.

THE VANADIUM CORPORATION OF AMERICA, New York, has ordered from the United States Steel Corporation 1,000 tons of 40-lb. rail for use on its new line in Peru.

Machinery and Tools

THE ATCHISON, TOPEKA & SANTA FE has issued a list of machine tools desired in which are noted lathes, borers and other shop equipment.

COUNTY COMMISSIONERS in Texas have no authority to compel railroads to join counties in the elimination of grade crossings and to share the cost thereof, according to an opinion of the attorney general's department at Austin, on June 28.

Supply Trade News

James L. Gough, president of the **Federal Machinery Sales Company**, Chicago, has retired from active business.

The **Union Railway Equipment Company**, Chicago, is having plans drawn for a one-story forge shop, 75 x 120 ft., to be erected at Hammond, Ind.

Hugo T. Burgeson, who has been in the employ of the **Sheafe Engineering Company, Inc.**, Chicago, since July 1, 1919, has been promoted to the position of manager of that company.

Mr. Burgeson was born at Water Valley, Miss., in May, 1885. He entered railway service as an employee in the supply department of the Illinois Central and filled various positions in the storehouses and offices of the road. He later attended Armour Institute of Technology, Chicago, taking up a mechanical course and later worked with several manufacturing concerns, until his connection with the Sheafe Engineering Co., Inc., on July 1, 1919, as noted above.



H. T. Burgeson

Weston Dodson & Co., Inc., Bethlehem, Pa., announce the appointment of **F. R. Wadleigh** as export sales manager, 4006 Woolworth building, New York.

Frederick William Bason, solicitor for the Railway Educational Bureau, Omaha, Nebr., has been made vice-president of the **Sheafe Engineering Company, Inc.**, Chicago. Mr.

Bason was born at Galesburg, Ill., on January 4, 1874. He served as an apprentice machinist on the Chicago, Burlington & Quincy, at Aurora, Ill., and the New York, Chicago & St. Louis, at Chicago, for a period of five years. He then entered the service of the Illinois Central as a machinist and during a period of 14 years was successively airbrake foreman, chief material inspector and supervisor of apprentice instruction. For the following four years he was connected with the Omaha Public Schools



F. W. Bason

as director of vocational work in the Fort School for Boys and was later appointed head of the manual arts department of the South Omaha High School, which position he held for a period of two years prior to his appointment with the Railway Educational Bureau.

Roland Whitehurst, of the New York sales office of the **Electric Storage Battery Company**, Philadelphia, Pa., has been appointed manager of its Washington, D. C., sales office.

B. A. Plimpton, sales manager of the **Locke Insulator Manufacturing Company**, Victor, N. Y., has tendered his resignation which has been accepted effective August 15. **D. H. Osborne** is acting sales manager, Victor, New York.

The **Oxweld Acetylene Company**, Newark, N. J., has been given a distinguished service award by the War Department of the United States for distinguished service in the war.

W. L. Randall and **T. D. Randall** of D. W. Randall & Co., Chicago, have recently organized the **Randall Foundry** and will build a plant at Michigan City, Ind., for the manufacture of grey iron castings for railway equipment.

J. Leonard Replogle, president of the **Vanadium Corporation of America**, and chairman of the **Replogle Steel Corporation**, New York, has been elected a director of the **Berg & Hutton Steel Corporation** in Teschen, Czechoslovakia, of which the Schneider Company, Creusot, France, holds the controlling interests.

T. D. Slingman has joined the sales organization of the **Keller Pneumatic Tool Company**, Grand Haven, Mich., as special representative, with headquarters at its Pittsburgh office. Mr. Slingman has for many years been identified with the selling organization of the Chicago Pneumatic Tool Company, for the past nine years as district manager at Detroit. He left the service of that company on June 1 and shortly thereafter joined the Keller force.

Sidney G. Johnson, who resigned, effective August 1, as vice-president and director of the **General Railway Signal Company**, to become president of the **Signal Service & Supply Corporation**, New York, as was announced in the *Railway Age* of July 9, page 81, was born in 1874 in Eccles, Lancashire, England. He entered Harrowgate boarding school when he was about 9 years old and at the age of 12 came to America and went to Swissvale, where his father, Henry Johnson,



S. G. Johnson

was works manager of the Union Switch & Signal Company. About a year later he went to Rahway, N. J., where the Johnson Railroad Signal Company had been established, and during vacations he worked in the shops and drawing office. He attended a preparatory school and for two years after leaving school he worked in the construction gang of the Johnson Railroad Signal Company. He later served with the construction forces of the Union Switch & Signal Company for a year. In 1896, when the Standard Railway Signal Company was organized, with his father as president, he was made signal engineer and had charge of the locking and dog sheets, making estimates, etc. When the company went to Troy he went with it; but, after the Trojan Car Coupler Company's interests took hold, his father left the Standard and he followed him after a few months and went to the Union Switch & Signal Company in 1899 in the New York office. Shortly afterward he was appointed engineer of construction for the eastern district and later was for two years at Swissvale as signal engineer in charge of the estimating department. He then went to New York and had charge of installing the signal system on the Interborough and of other large installations put in at that time. When the Interborough work was finished he was made eastern manager in charge of sales and construction. About 1910 he was appointed general sales manager, and in March, 1914, became vice-president in charge of sales and engineering. The following July he left the service of the Union Switch & Signal Company to go to the

General Railway Signal Company as assistant to the president, and since August, 1914, has been a vice-president and director of the latter company.

Appointments have been made at the plant of the **Lackawanna Steel Company**, Buffalo, N. Y., as follows: **George W. Whitehead** has been appointed general superintendent, succeeding **Thomas H. Mathias**, who was recently elected vice-president and general manager; **H. J. Kelly** has been appointed assistant general superintendent, succeeding Mr. Whitehead; and **Randolph Payson** has been appointed assistant superintendent, succeeding Mr. Kelly.

The **Burden Iron Company**, Troy, N. Y., has entered into a contract for a term of years with the **Burden Iron Company Railroad and Steamship Division**, to dispose of its products as applied to railroad and steamship companies. Edward L. Smith is the general partner of this newly organized partnership, and W. J. Caton has been appointed secretary, with office at 3711 Grand Central Terminal, New York. Mr. Caton has resigned from his position with Brown & Co., Inc., Pittsburgh, Pa.

Italian Decorations Awarded to Americans for War Work

At a luncheon in the Railroad Club, New York, on July 15, presentations were made by Acting Italian High Commissioner Quattrone, of decorations conferred by the King of Italy in recognition of services during the war to **Elbert H. Gary**, chairman of the United States Steel Corporation; **James A. Farrell**, president of the same corporation; **William H. Woodin**, president of the American Car & Foundry Company; **Andrew Fletcher**, president of the American Locomotive Company; **Charles S. Gawthrop**, vice-president of the American Car & Foundry Company; **Eugene P. Thomas**, president of the United States Steel Products Company, and **Charles M. Muchnic**, vice-president of the American Locomotive Sales Corporation. The Italian Government has made **Delos W. Cooke** associate director of the Cunard and allied lines, a Cavalier of the Order of St. Maurice and St. Lazarus, in recognition of his services to Italy in connection with the Red Cross and as a member of the Traffic Executive Committee of the Allies and of the Exports Control Committee.

Trade Publications

PORTABLE FLOOR CRANES.—The Canton Foundry & Machine Company, Canton, Ohio, has issued a 34-page catalog illustrating and describing the portable floor cranes and hoists manufactured by that company for use in freight houses, warehouses, shops, etc., for lifting loads up to 6,000 lbs.

JACKS.—The Duff Manufacturing Company, Pittsburgh, Pa., has prepared a small 16-page folder (No. 803) illustrating and describing briefly Duff and Barrett jacks of the types most widely sold. This booklet is a miniature catalog giving complete information regarding dimensions, capacities and list prices of these jacks.

FEEDWATER HEATING.—Figures showing the amounts that may be saved on coal bills by preheating feedwater with the heater developed by the Locomotive Feed Water Heater Company, New York, are contained in bulletin No. 6, issued by that company. The savings are also presented graphically on a chart which is arranged to show the monthly saving per locomotive for any combination of fuel consumption and gross ton miles per month and for varying coal costs.

SINGLE STAGE AIR COMPRESSORS.—The Pennsylvania Pump & Compressor Co., Easton, Pa., has recently issued a 12-page illustrated bulletin known as No. 100 and devoted to the Class 3-A, power-driven, single-stage, straight line air compressors, manufactured by this company. The bulletin gives complete data on the capacities of the various types in addition to describing the latest improvements made in this line, consisting of such features as a new type of ring plate valve, solid forged crank-shaft, connecting rod with solid box eyes, etc.

Financial and Construction

Railway Financial News

ATCHISON, TOPEKA & SANTA FE.—This company has applied to the Interstate Commerce Commission for an order authorizing the issuance and delivery of its common stock from time to time in amounts not exceeding \$9,243,000 in exchange for its 4 per cent convertible bonds.

ANTHONY & NORTHERN.—A board of referees appointed by the Interstate Commerce Commission to pass upon the claim of this company for compensation for the use of its property by the government has rendered a decision that the railroad was under federal control from December 28, 1917, to and including June 29, 1918, and not thereafter, and that the just compensation for the use of the company's property for that period was \$4,756.26, in addition to which the company is entitled to \$5,460.38 as reimbursement for the deficit in railway operating income which the company assumed and paid on behalf of the government. The company claimed that it was under federal control until March 1, 1920, and that it was entitled to compensation of \$23,281 annually and \$44,550 for the maintenance and upkeep of its property during federal control, less the amounts actually expended for maintenance and upkeep during federal control. The government contended that if the railroad was taken under federal control it was relinquished on June 30, 1918, although the applicant contended that the notice of relinquishment did not reach it until July 5, 1918. The government also contended that if the property was held to be taken under federal control the just compensation payable annually should not exceed the standard return of \$9,512 and probably should not exceed \$4,833, the amount of the company's annual railway operating income for 1917.

BOSTON & MAINE.—Judge Braley, in the Massachusetts Supreme Court, on July 8 dismissed the petition by E. F. Brown and C. M. Greene, minority stockholders, asking the court to review the order of the Public Utilities Commission authorizing the Boston & Maine to refund its floating debt by issuing bonds to the amount of \$17,606,000 bearing interest at 6 per cent. Counsel for Brown and Greene appealed from the decision to the Superior Court and the case will be argued in September.

CENTRAL VERMONT.—An application to the Interstate Commerce Commission for the issuance by the commission of an order authorizing the applicant to issue \$15,000,000 refunding mortgage gold bonds, dated May 1, 1920, principal payable May 1, 1930, together with interest at 50 per cent, has been assigned for hearing before Examiner Burnside, at Washington, July 23.

HAWKINSVILLE & FLORIDA SOUTHERN.—Robert B. Pegram, vice-president and resident executive officer at Atlanta, Ga., of the Southern Railway, was on July 17 appointed receiver of the Hawkinsville & Florida Southern, which operates between Hawkinsville, Ga., and Camilla, 95 miles. The receivership was asked for by the Georgia Southern & Florida, which claimed that the Hawkinsville line was indebted to it to the sum of more than \$40,000.

ILLINOIS SOUTHERN.—This road will be offered for sale at Salem, Ill., on September 20. It operates between Salem, Ill., and Branch Junction, 140 miles. The road was placed in the hands of receivers on September 17, 1918, and operations were suspended on December 12, 1919.

NEW YORK, NEW HAVEN & HARTFORD.—See editorial elsewhere in this issue.

NORFOLK & WESTERN.—This company has been authorized by the Interstate Commerce Commission to continue, in accordance with the terms of three indentures dated March 1, 1912, March 25, 1913, and January 25, 1919, respectively, between petitioner and Guaranty Trust Company of New York, trustee: (1)

The issuance of its common capital stock out of the remaining duly authorized and unissued shares of the 133,000 shares of the aggregate par value of \$13,300,000 reserved for the purpose under the aforesaid indenture dated March 1, 1912, in exchange for an equal amount in par value per share at the time of conversion of its convertible 10-20 year 4 per cent gold bonds payable September 1, 1932, issued under said indenture dated March 1, 1912, on or at any time before September 1, 1922, but not later; (2) the issuance of its common capital stock out of the remaining duly authorized and unissued shares of the 183,530 shares of the aggregate par value of \$18,353,000, reserved for the purpose under the aforesaid indenture dated March 25, 1913, in exchange for an equal amount in par value per share at the time of conversion of its 10-25 year 4½ per cent gold bonds due and payable September 1, 1938, issued under said indenture dated March 25, 1913, on or at any time before September 1, 1923, but not later; and (3) the issuance of its common capital stock out of the remaining duly authorized and unissued shares of the 179,450 shares of the aggregate par value of \$17,945,000, reserved for the purpose under the aforesaid indenture dated January 25, 1919, in exchange for an equal amount in par value per share at the time of conversion of its convertible 10-year 6 per cent gold bonds due and payable September 1, 1929, issued under said indenture date January 25, 1919, on or at any time before September 1, 1929, but not later. It is further ordered, that all of said common capital stock reserved but not issued by (1) midnight of September 1, 1922, as provided in said indenture dated March 1, 1912; (2) midnight of September 1, 1923, as provided in said indenture dated March 25, 1913; and (3) midnight of September 1, 1929, as provided in said indenture dated January 25, 1919, shall be issued or otherwise disposed of only on order from this commission.

PITTSBURGH & LAKE ERIE.—This company has applied to the Interstate Commerce Commission for authority to issue two 90-day, 6 per cent notes, one for \$500,000 and one for \$425,000, to renew notes previously given for the purchase of Liberty bonds in 1918. This represents the seventh renewal of the notes. This company has also applied for authority to issue 7 per cent equipment trust certificates to the amount of \$2,400,000, to be used for the acquisition of 1,375, 55-ton, all-steel hopper cars costing approximately \$3,508,300. For 875 of these cars it is expected to use trucks furnished by the company, which will deduct \$280 each from the cost of the new cars.

SUPERIOR & SOUTHEASTERN.—This 60-mile logging road, running out of Grand View, Wis., and all the property, mills and timber lands of the Willow River Lumber Company at Hayward, Wis., have been purchased by the Edward Hines Lumber interests of Chicago.

Railway Construction

CHICAGO, MILWAUKEE & ST. PAUL.—This company has filed an application with the Interstate Commerce Commission for a certificate of public convenience and necessity for the extension of a branch line from Blackfoot Junction, Mont., to Clearwater Junction, about 21 miles along the bank of the Big Blackfoot river in a general easterly and northeasterly direction upon a right of way heretofore acquired and a grade heretofore constructed.

CISCO & NORTHEASTERN.—Construction has been completed from Cisco, Tex., to Wayland, a point twelve miles south of Breckenridge.

ST. LOUIS-SAN FRANCISCO.—This company has let contracts for extensions to roundhouses at Afton, Okla., and Oklahoma City to the Globe Construction Company for \$39,000 and \$57,000, respectively; at Newburg, Mo., to C. E. Hamilton for \$39,000; and at Monett, Mo., and Amory, Miss., to the Jarrett Construction Company for \$39,000 and \$44,000, respectively. Another contract has been let to the Ogle Construction Company, of Chicago, for the erection of a 200-ton frame coaling station at Monett, Mo., for \$20,000. Work has started on the first four projects named.

THE JACKSON & EASTERN.—This line has filed an application with the Interstate Commerce Commission under the provisions of the Transportation Act of 1920, asking permission to construct approximately 50 miles of line from Sebastopol, Miss., to Jackson.

Railway Officers

Executive

J. B. Yohe, general manager of the Pittsburgh & Lake Erie with headquarters at Pittsburgh, Pa., has been elected vice-president and general manager with the same headquarters, effective July 15.

Financial, Legal and Accounting

James E. Baldwin has been appointed assistant general auditor of the New York & Hartford, effective July 1.

Operating

B. M. Mergen has been appointed assistant trainmaster of the Salt Lake division of the Southern Pacific, with headquarters at Ogden, Utah, effective July 1.

J. E. Murphy has been appointed superintendent of the Southern division of the Kansas City Southern and superintendent of the Texarkana & Fort Smith, with headquarters at Texarkana, Tex., succeeding **G. P. Williams**, assigned to other duties, effective July 1.

Elmer Richards, superintendent of safety on the St. Louis-Southwestern, with headquarters at Mt. Pleasant, Texas, has been promoted to superintendent of telegraph, with headquarters at Tyler, Texas. Mr. Richards was born at Bowling Green, Mo., on May 20, 1864. He entered railway service in 1880 as a telegraph operator with the Chicago & Alton. For the following four years he served as a telegraph operator with the Wabash, the Atchison, Topeka & Santa Fe, and the Western Union Telegraph Co. In October, 1884, he entered the service of the Cotton Belt as manager of the telegraph office at Pine Bluff, Ark. He was promoted successively to train dispatcher, assistant chief dispatcher, chief dispatcher and train master, and in January, 1895, became general manager of the Louisiana & Arkansas. One year later he was appointed train dispatcher on the Chicago & North Western, with headquarters at Boone, Ia. He was appointed a dispatcher on the St. Louis-San Francisco, with headquarters at Springfield, Mo., in 1901. He re-entered the service of the Cotton Belt as chief dispatcher, with headquarters at Mt. Pleasant, Texas, in 1902, and was promoted successively to train master, assistant superintendent and superintendent. During federal control Mr. Richards was assistant superintendent of safety under federal manager A. Robertson, with supervision also over the Missouri Pacific, the Cotton Belt and the Louisiana & Arkansas. With the return of the railroads to private control, he became superintendent of safety on the Cotton Belt, which position he held at the time of his recent appointment.

R. M. Johnson, superintendent of the Detroit Terminal division of the Wabash, with headquarters at Detroit, Mich., has been appointed superintendent in charge of the operation and maintenance of the joint tracks of the Wabash and Pere Marquette between 18th St., Detroit, and Delray, with headquarters at Detroit, effective July 1.

Fred Meyers, superintendent of safety on the Wabash, with headquarters at St. Louis, Mo., has been promoted to superintendent of the Detroit Terminal division, with headquarters at Detroit, Mich., effective July 1, succeeding R. M.



E. Richards

Johnson, who has been transferred to other duties. **D. G. Philips** has been appointed superintendent of safety with headquarters at St. Louis, succeeding Mr. Meyers, effective July 1.

Alfred D. Carey, whose promotion to superintendent of the Grand Trunk Pacific with headquarters at Edson, Alberta, was announced in the *Railway Age* of July 2 (page 45), was born on July 5, 1879, at Allandale, Ontario. Mr. Carey entered railway service as a brakeman with the Canadian Pacific on July 8, 1897, and was soon promoted to conductor. In July, 1907, he became a conductor on the Grand Trunk Pacific, and in April, 1912, was promoted to trainmaster, with headquarters at Mirros, Alberta. Five years later he was promoted to assistant superintendent with headquarters at Biggar, Saskatchewan. From March 1, 1918, to June 21, 1920, he served as assistant superintendent at Smithers, B. C., and upon the latter date was promoted to his present position.

Traffic

E. W. Long has been appointed division freight and passenger agent of the Seaboard Air Line, with headquarters at Charlotte, N. C., effective August 1, and **F. H. Bryant** has been appointed commercial agent at Greenville, S. C., effective July 16, succeeding F. G. Roberts, resigned.

Albert N. Breland, who has been appointed freight claim adjuster of the Chicago region of the Erie, with headquarters at Chicago, was born at Meridian, Miss., March 16, 1885. He was educated at Meridian Male College, Meridian, Miss., leaving that institution in 1910. Mr. Breland entered railway service as a tariff clerk with the Baltimore & Ohio in July, 1912, on which road he was promoted to freight claim investigator in December, 1913. In February, 1915, he was appointed freight claim investigator for the Delaware & Hudson. During the next two years he served this company in that capacity and in March, 1917, he entered the service of the Erie as freight claim investigator, which position he occupied at the time of his promotion to freight claim adjuster, following the division of the Erie operating organization into four regions.

C. C. Dana, general freight and passenger agent of the Panhandle & Santa Fe, has been appointed general freight agent of the Atchison, Topeka & Santa Fe, with headquarters at Chicago, and **T. B. Gallaher**, division freight agent of the Panhandle and Santa Fe, with headquarters at Amarillo, Tex., has been promoted to succeed Mr. Dana, effective July 15.

Oliver L. McKay, who has been appointed executive general agent of the Southern system, the Mobile & Ohio, and the Southern in Miss., with headquarters at Meridian, Miss., as noted in the *Railway Age* of July 9 (page 85), was born on May 1, 1859, at Mobile, Ala. He graduated from high school in 1877, and began railroad work on October 1, 1879. From 1885 until 1900 he served as agent of the same road at Aberdeen, N. Y. He was then transferred in the same capacity to Meridian, Miss., and retained that position until his recent appointment.

W. J. Burr and **A. B. Chown**, general agents, passenger department of the Grand Trunk at Pittsburgh, Pa. and New York, respectively, will also act in the same capacities for the Canadian National, with the same headquarters, succeeding respectively **F. G. Wood** and **F. A. Young**, who have been transferred. **D. M. Crawford** has been appointed general

agent of the Grand Trunk, with headquarters at Cleveland, Ohio, effective July 15. **G. M. Thomas** and **L. J. Rouleau** have been appointed commercial agents for both companies, with headquarters at Windsor, Ont., and Sherbrooke, Que., respectively, effective July 15.

O. F. Johnson, assistant to the traffic manager of the Lehigh Valley at New York, has been appointed assistant general freight agent, with the same headquarters, succeeding **H. C. Burnett**, deceased. **T. Clem Beck**, chief of the tariff bureau, with headquarters at New York, has been appointed assistant general freight agent, and **M. J. Ormond**, foreign freight and lighterage agent at New York, has been appointed general eastern freight agent, both with headquarters at New York. **G. N. Whepley** has been appointed foreign freight agent, with headquarters at New York. **A. C. McIntyre**, city freight agent at New York, has been appointed assistant to the traffic manager at New York.

Mechanical

Elmer R. Larson, supervisor of apprentices of the Delaware, Lackawanna & Western, has been appointed special motive power inspector and **John Murray**, assistant supervisor of apprentices, has been promoted to supervisor of apprentices, succeeding Mr. Larson, effective May 10.

J. F. Hill, master mechanic of the Wheeling & Lake Erie at Brewster, Ohio, has been promoted to superintendent of motive power and cars, with the same headquarters, succeeding **George Durham**, resigned; **J. H. Douglas**, general shop foreman at Ironville, Ohio, has been promoted to master car builder at Brewster, and **W. H. Eckroate**, road foreman of engines at Brewster, has been appointed master mechanic, succeeding Mr. Hill, effective July 15.

C. G. Juneau has been appointed acting master car builder of the Chicago, Milwaukee & St. Paul, with headquarters at Milwaukee, Wis., effective June 1, succeeding **L. K. Sillcox**. Mr. Juneau was born on December 12, 1874, at Milwaukee and received a public school education. He served a blacksmith apprenticeship in the car and locomotive departments of the Chicago, Milwaukee & St. Paul, which he completed on October 1, 1899, after which he was employed for about a year as a tool dresser by the Strobel Structure Company, Chicago, returning to the Chicago, Milwaukee & St. Paul on July 21, 1900, working in the car department. On February 12, 1906, he was appointed assistant foreman of the blacksmith shop. On March 1, 1918, he was appointed general foreman of the car blacksmith department for the entire system and on June 1, 1918, was made general supervisor of the freight car department, including the blacksmith department. In March, 1920, he was placed in charge of the Milwaukee terminal and shop district and retained that position until his recent appointment.

Engineering, Maintenance of Way and Signaling

Harry Pollard has been appointed general fire inspector on the Southern Pacific, with headquarters at San Francisco, Cal., effective July 1, succeeding **Niles Searls**, who has been retired.

Purchasing and Stores

E. H. Hughes has been appointed general storekeeper of the Kansas City Southern with headquarters at Pittsburgh, Kans., effective July 15, succeeding **R. C. Lowry**, resigned.

Obituary

Benjamin A. Kimball, president of the Mount Washington, died at his summer home at Lake Winnebago on July 20.

Bertram Young, auditor of freight and ticket accounts of the Delaware, Lackawanna & Western with headquarters at Scranton, Pa., died at his home in Scranton on July 19 after a long illness.